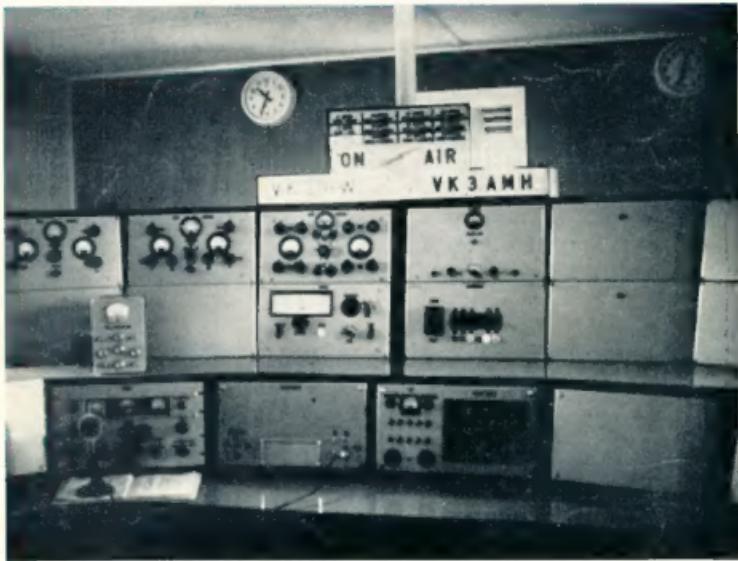


# AMATEUR RADIO

JUNE 1963



Vol. 31, No. 6



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# "AMATEUR RADIO"

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA. FOUNDED 1910.

JUNE 1963

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## OUR COVER

The inside of VK3HW and VK3AMH looks like a "commercial" set-up. It is a credit to Australian Amateur Radio, and complements the previous cover photo of their aerial array.

## FEDERAL COMMENT



## A FUTURE IN ADMINISTRATION

Every Radio Amateur is deeply concerned about the future. Many vociferously clamor for preparations to be made for the battle to retain Amateur rights and privileges at the next I.T.U. Conference—extension of privileges now, or for this or for that action to be taken.

### WHO IS GOING TO DO ALL THESE THINGS?

In order to carry out the wishes of its members and properly represent the Australian Amateur, the W.I.A. must have fully manned Federal and Divisional Councils backed by active sub-committees consisting of qualified personnel.

There are some who claim that the old experienced members of these bodies are getting too long in the tooth and that young blood should be injected into the organisation.

We could not agree more; however experience indicates that enthusiasm and zeal must be tempered with sagacity borne of experience.

The time was never more opportune for the formation of active working committees employing younger personnel to tackle our major problems and prepare to step into the shoes of the oldsters as they relinquish the burden.

What better way is there of achieving continuity of administration, tempered with the wisdom of experienced administrators?

Those members who are prepared to serve such an apprenticeship will enjoy the fruits of their labor in the part they play in insuring the future of both the W.I.A. and their fellow Amateurs. The administrative experience so gained will in itself be a valuable asset in everyday life.

FEDERAL EXECUTIVE, W.I.A.

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# A Broad-Band, Bandswitched, Crystal-Locked Converter

A. S. MATHER,\* VK2JZ

**A CRYSTAL-LOCKED Converter** provides a cheap and effective way of improving the performance of almost any superhetrodyne receiver.

This unit was made up to use in connection with my s.s.b. modified AR7 which has a Band C coil box, modified to allow it to tune from 3.5 to 4.0 Mc. through the complete tuning range of the dial, from approximately 500 to 0.

The 7, 14, 21 and 28 Mc. signals are heterodyned so they are tuned with bandspread on the 3.5 to 4.0 Mc. range of the receiver.

Thus we now have a double conversion superhet with a crystal-locked high frequency oscillator, better image rejection, bandswitching, bandspread and greater stability as the 2nd h.f. oscillator is tuned from 3955 to 4555 Kc. for all bands.

Numerous articles have been written on crystal-locked converters and they are all basically the same with the exception of the type and frequency of the crystal oscillator.

It is hoped that the following article may be of interest to those wishing to improve their receiver performance.

## THE CRYSTAL-LOCKED OSCILLATOR

Four FT243 crystals with fundamental frequencies of 3.633 Mc., 3.500 Mc., 5.833 Mc. and 8.166 Mc. are used on their second overtone of approximately 10.8 Mc., 10.5 Mc., 17.5 Mc. and 24.5 Mc. to convert the 7 Mc., 14 Mc., 21 Mc. and 28 Mc. bands to the 3.5 Mc. to 4.0 Mc. tuning range of the receiver.

\* "Wolarol," 14 William St., Singleton, N.S.W.

The harmonics above the fundamental are called the overtones of the fundamental.

Most magazines refer to 3rd overtone operation of say a 3.5 Mc. crystal as oscillation on a frequency a few kilocycles lower than its 3rd harmonic with no output on the fundamental or 2nd harmonic, that is 3.5 Mc. or 7 Mc.

I will use this convention as far as the mode of operation is concerned, but as the 1st overtone equals the 2nd harmonic, operation of a 3.5 Mc. crystal at a frequency of approximately 10.5 Mc. is the 2nd overtone and not the 3rd overtone as generally stated.

I will not attempt to discuss the theory of overtone crystal oscillators, which has been discussed before in "A.R.,"<sup>†</sup> but the most important fact is that when the feedback is correctly adjusted and the plate circuit tuned, oscillation at the series resonant frequency will take place at the 2nd overtone, which is a few kilocycles lower in frequency than its 3rd harmonic. However, as stated, only oscillation at this and higher frequencies is obtained and none at the fundamental and 2nd harmonic. So you can see the injection frequency is always 3.5 Mc. lower than the tuned frequency with the exception of the 7 Mc. band when it was approximately 3.8 Mc. higher and the receiver tunes backwards from 3.8 Mc.

This is a slight disadvantage, but there appears to be no satisfactory way of tuning the 7 Mc. band from 3.5 Mc. higher, as with the other bands, without using a 3.5 Mc. crystal on its funda-

mental and that puts a hefty 3.5 Mc. signal at the band edge.

Needless to say, using crystals on other frequencies and turning backwards or forwards on various receiver frequencies open other possibilities. It would be possible to use a 3.5 Mc. crystal with the oscillator coil tuned with switched condensers to oscillate on its 2nd, 4th and 6th overtone to give forward tuning at 3.5 Mc. on 14, 21 and 28 Mc., and backward tuning from the 2nd overtone at 10.5 Mc. to give 7 Mc. coverage from 3.5 to 4 Mc. on the receiver.<sup>‡</sup>

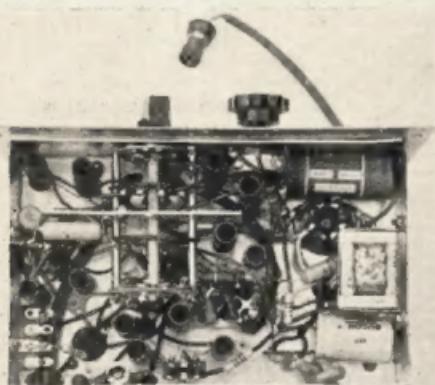
The value of the injection voltage would not be the same for each overtone as the voltage output will decrease as the overtone frequencies get higher, which could be a drawback. However, it has the advantage of saving three crystals and three inductances.

It should be obvious that unless considerable and, I think, unnecessary care is taken with the selection of the crystal frequencies, owing to the overtone operation being slightly lower than the 3rd harmonics, all band edges may not be on exactly 3.5 Mc. on the receiver.

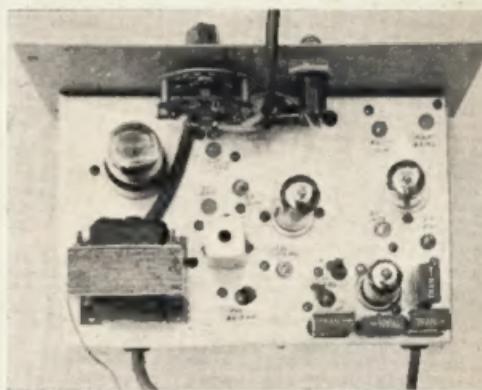
## OVERTONE OPERATION

As stated before, overtone operation only of the injection crystal oscillator is most important, because if the signal you get at say 10.5 Mc. also appear at 3.5 Mc. and 7 Mc., then the possibility of spurious signals, birdies and images is greatly increased, as they can beat with the incoming signal and harmonics of the receiver h.f. oscillator and i.f. frequencies.

† Page 31, "QST" May 1960.



Under-chassis view of VK2JZ Converter. Around SW1 are the various coils. Those nearest front panel are L1 and L2 for 28, 21, 14 and 7 Mc. Below these are L3 for 11 to 17, 7, 14, 21 and 28 Mc. L4 coils are located at rear of SW1 (11 to 17, 7, 14, 21 and 28 Mc.). Mounted on right hand side of chassis is the h.t. choke.



Above-chassis view of VK2JZ Converter. Grouped around the 6C4 oscillator can be seen the four crystals. Other valves (left to right): 8X5 rectifier, EF85 mixer, EP85 i.f. The switch shown is SW2, to the right of which is the pilot holder. Output L.t. is to right of power transformer.

This will soon be evident if the crystal oscillator is operated in the incorrect mode.

It is also important that all the crystals have similar electrical characteristics so that when the right amount of feedback for overtone operation is selected by adjustment of the 50 pF. Philips trimmer, it will be the right value for the others, otherwise you may find that what is the correct value of feedback to allow the crystal to overtone when the coil is tuned through the 3rd harmonic is too much for another crystal type and the overtone mode will not take over, or conversely, it could not be enough.

I have found it very advantageous in the adjustment of the overtone oscillator to use a communications receiver; and if your own receiver is not suitable to chase the various frequencies, perhaps you can borrow one for a few hours.

Tune to the 3rd harmonic of one crystal frequency with the Philips trimmer at maximum capacity. The crystal will oscillate on its fundamental and therefore, its 3rd harmonic. The capacity is then varied until operation of the 3rd harmonic will cease and re-appear a few kilocycles lower in frequency on the 2nd overtone, when the coil slug is tuned through the 2nd overtone. Then to make absolutely sure, check back to see there is no oscillation on the fundamental or 2nd harmonic.

Once the correct value of feedback is found, for one crystal, it should be OK for the remainder and only the coil slugs will have to be adjusted. It

is a good idea to lock the slug screws in their correct position with a suitable compound. I found resin to be quite satisfactory.

A 6C4 is used as the overtone oscillator, but any suitable triode, tetrode or pentode should work in this mode.

AUXER

The 2nd overtone frequency is introduced into the grid of the mixer valve

## COIL DATA

All coils are wound on 7/16" diam. slug tuned formers.

In each case, L1 is spaced 1/16" from L2.

28 Mc.—  
L1—4 turns, 32 gauge B. & S. enam.

L2-10 " 22 " 29  
L3-10 " 22 " 29  
L4-12 " 22 " 29

L4-13      "      32      "      "      "

L1—4 turns 32 gauge E. & G. enamel.  
L2—15 " 22 " " "  
L3—15 " 22 " " "

**14 Mo.—**

L1—4 turns 32 gauge B. & S. enam.  
 L2—24      "      32      "      32      "  
 L3—24      "      32      "      32      "

<sup>7</sup> Mo—

L1— 7 turns 32 gauge B. & S. enam.  
L2—55      "      32      "      "

L3-65 32 19 19  
L4-35 32 19 19

\* With parallel 10 pF. condenser.

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by a condenser of approximately 5 pF., made by twisting two short lengths of P.V.C. bell-wire together and snipping them until the desired injection voltage is obtained.

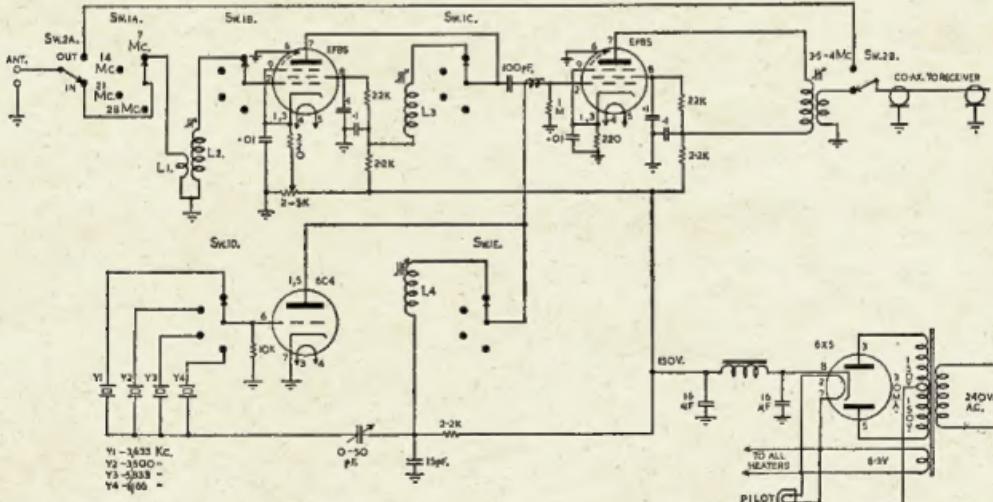
It is good practice to have as much injection voltage as possible, without having the combined injection voltage and signal voltage exceed the mixer bias, which would cause the mixer to draw grid current and generate spurious signals.

I have used a EF85 because I had two for the vision if, channel of my t.v. set, but a 6AH6, 6AK5, 6BV6 or any high conductance pentode or triode would be satisfactory. Another attractive possibility is to use a 6UBG as the mixer with the triode section as the crystal oscillator. As the oscillator is crystal controlled, no problem with oscillator pulling should occur.

## OUTPUT CON

The output of the mixer has to be transformed from its plate impedance to the input impedance of the receiver and almost any slug-tuned i.f. can be put into service, as a 3.5 Mc. i.f.

Remove any parallel fixed condenser and enough turns (about three-quarters of them) so the coil will resonate at 3.5 Mc. with the internal capacity of the mixer and its own slug. Remove the other coil and wind on about ten turns of No. 26 gauge enamelled wire. Some converters feed the mixer with a 2.5 m.H. R.F.C. and take the output through a 0.01  $\mu$ F. condenser to the receiver. Whilst this would be high impedance, it would suit most of the older receivers.



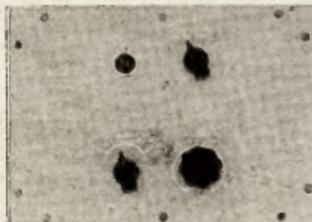
#### VK2.IZ BROAD-BAND CRYSTAL-LOCKED CONVERTER-

## R.F. STAGE

The r.f. stage is quite conventional and any high Gm tube such as the 6A6H, 6CB6 or 6BZ8 would be satisfactory. A EP85 or its equivalent, the 6BY7, is used here because its equivalent noise resistance of 1,500 ohms makes it an excellent tube for broadband operation and it is used extensively in t.v. vision I.F. channels.

A gain control is used in the cathode circuit and it is normally left in the maximum position except on very strong signals.

It should be noted that the signal-to-noise ratio delivered by the r.f. stage determines the overall signal-to-noise ratio of the receiver. Therefore, improvement in the noise figure on weak signals can be obtained by running the converter flat out and controlling the gain by r.f. control on the receiver, because as the gain of the r.f. stage of the converter is reduced, the Gm is reduced and the noise figure is increased.



Front panel of the VK1JZ Broadband, Band-switched, Crystal-Locked Converter. Controls: top right, converter in/out; lower left, band switch; lower right, r.f. gain. The pilot is seen in the top left.

## BROADBANDING

You will notice that the various coils resonate only with their own inductance, tube capacities and circuit strays. Some constructors may prefer to tune the grid circuits of the r.f. and mixer stages, but even if ganged this means another control and tracking problem and the gain is more than adequate now. I have not measured the signal-to-noise ratio, but it seems to be excellent. Although the number of turns for each coil is given, these are the values I started with, as suggested by VK2BK and some pruning will most probably be necessary. It was beyond me to count the turns after I had them mounted in the converter.

A g.d.o. is almost a must for any constructor and it will be evident that you will need to use one to get the coils right in the middle of the passband, particularly the 3.5-4 Mc. output i.f.t.

Be sure you wind them so they obtain the best possible effects from the slug tuning.

When the unit is operated the slugs can be adjusted for the best broadband characteristic before locking.

## CASE

The whole unit was made up in a standard metal case, 9" wide, 8 $\frac{1}{2}$ " high

and 5 $\frac{1}{2}$ " deep, with the two switches, gain control and pilot mounted as shown. The antenna terminals, output co-ax and h.t. transformer c.t. are all brought out the back. I used a 6X5 because I had one on hand. It would have considerable space and heat if two silicon diodes such as OA210s were used, or the required voltages could be taken from the receiver.

It is important to take the output co-ax from S.W.2 inside the case to the antenna terminals on the receiver, as no other pick-up must reach the receiver terminals other than from the converter.

Shielding is used between r.f. and mixer banks of SW1, but it may not be necessary.

## CONCLUSION

No doubt constructors will have their own ideas as to components, crystal frequencies, number of crystals, placement of parts, etc. The circuit values are not critical and common sense variations from the values marked would be in order.

This is a description of a unit which overcomes most of the shortcomings of other converters I have used and an old receiver can be made capable of greatly improved performance.

## UPPER SIDEBAND-XYL TYPE

I know all about being a beginner's wife, experience has taught me nearly all the do's and don'ts. A Radio Ham's wife needs to possess endurance, real stamina, courage in the face of great odds and enough cussedness to get her own way when it really matters.

My husband started off in a small way by owning and operating a set attached to the Flying Doctor base at Port Augusta. He has always been interested in radio and having whetted his appetite he got more and more enthusiastic as time went by. Two shifts later, one to Adelaide and the other to Port Pirie, he has really got into his stride. When we shifted from Adelaide to Port Pirie he was faced with the heart-rending (for him) decision that he would have to part with some of his gear (junk to the peasants). He still speaks in hushed tones as he tells fellow Hams how he wheeled out three wheel-barrows full and gave them away.

We went through agonies while he was studying for his Limited Licence. He used to attend talks given by one of the local Hams every Tuesday night, then he would bend my ear for the rest of the week until I could have quoted Ohm's law in my sleep. As if this wasn't bad enough, he then took to studying turn about at home with another fanatic (that's what they are though they emphatically deny it). During these sessions no one was allowed to breathe.

At last the great night came. My husband had the shakes and his friend's ulcer was playing up, but off they went, supporting each other. No sooner was the exam. over than home to our place and over incessant cups of coffee (if your husband shows any interest in radio, immediately ask for an increased housekeeping allowance) went through every question. The friend was feeling despondent as he hadn't anywhere near completed the paper, but my better half had and he went from the heights to the depths and back up again as he strolled over what he had written.

Well then, of course, we had to wait for the results. He used to ring me up every morning and afternoon to ask if there was any sign of his results. For six weeks we waited, and believe

me they were the longest six weeks of my life. Then at last the letter came that said he was the possessor of a Limited Licence.

Well, if he'd won the lottery he could not have been more pleased. He danced around the kitchen, whizzed the children, hugged me, laughed, joked, stood up, sat down, and generally carried on like he'd taken leave of his senses.

I thought things would quieten down then, but no, he had to get a receiver and transmitter on the air and build this, that and the other. It's impossible to listen to our radio inside for drilling noises and my cake tins disappear to act as cases for various converters, etc. and to cap it all he's had me out doing a balancing act on his shoulders, cutting wire so that he had enough to put up an aerial. I might add I get shaky on a chair.

Now he's learning Morse and I'm going to petition that it be admitted as grounds for divorce.

He has now taken on being the Secretary of the local Radio Club. Of course you know who does all the typing, etc., and most of the running around. He hasn't got the time!

Well I guess I'm stuck with him. I took him on for better or worse, but surely it can't get much worse than this.

If you have a husband who is just starting to take an interest in being a Radio Ham, I suggest that you steer him to other interests, before it's too late.

—XYL, VK5ZEG.

## SUBSCRIPTIONS

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# A SWEEP GENERATOR FOR 455 Kc. I.F. ALIGNMENT

B. L. McCUBBIN,\* VK3SO, M.T.E.T.I.A.

**T**O those familiar with t.v. alignment techniques the sweeper is an essential tool. No other method permits the rapid accurate setting up of the i.f. response curve possible with a sweeper, yet we nearly all stick to the time honoured method of aligning our receivers and steam pens with a signal generator and output meter.

The piece of equipment to be described can be built mainly from the junk box. Most Hams will not need to shop around for anything but the Semi Cap.

The accepted type of sweeper as used for t.v. work generates its sweep at v.h.f. and this is then heterodyned to the desired spot. The author's aim was to directly sweep a 455 Kc. oscillator, thus making the equipment as simple as possible.

Many possible methods of sweep were tried and discarded for various reasons. One, which looked very promising, was the Wobblulator available ex disposals. This device has a metallic diaphragm which, unfortunately, suffers from fatigue and does a "King's Bridge" after a few hours work.

The saturable reactor type is not sufficiently linear for really good results.

Motor driven condensers, also, are difficult to make linear and are difficult to synchronise with the c.r.o.

\* 3 Kildare Street, Burwood, E.13, Vic.

With the increasing interest in s.s.b. and the need for accurate setting up of filters and selective i.f. channels the common method of laboriously graphing response curves is too much of a time waster. This sweeper will enable you to do in minutes what previously required hours.

This leaves us a little device which came on the market a couple of years ago. It is called a Semi Cap and looks like a silicon power diode. When properly used it will vary its capacity over a range of 3 to 30 pF and can easily be controlled with sinusoidal a.c.

A sweep generator to fulfil its requirements must be linear over the full sweep range, must be capable of synchronisation with a c.r.o., must have variable sweep width and controllable output.

The first requirement is met by the semi cap in that the capacity variation is linear with applied voltage.

The second requirement is simply achieved by using 50 cycle a.c. for both modulation and c.r.o. sweep.

The use of a.c. for this purpose introduces a further complication in that the i.f. under test is swept in both directions and exact superposition of the

forward and return trace is difficult. This is simply overcome by keying the oscillator with a 50 i.p.s. negative going square pulse of half cycle duration. Control of the output is gained by using a medium cut-off r.f. pentode as an electronic attenuator.

Low impedance output is obtained by the use of a cathode follower output. If high level output is desired, it can be taken direct from the attenuator anode.

There are three controls on the panel. These consist of a phase shift for the c.r.o. X.amp. drive, sweep width control and output control.

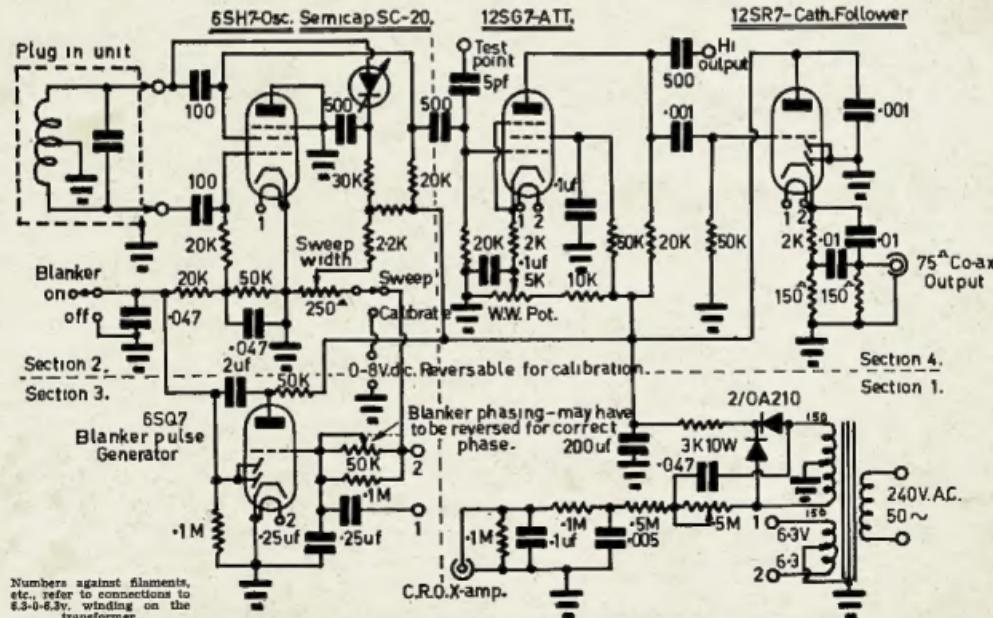
A second phase shift network will be seen in the grid circuit of the 6SQ7 blanking pulse generator. This control once set needs no further adjustment and can be mounted in any convenient position.

All valves used in the r.f. section are of the metal variety—because they were on hand and do not need screening.

## THE COIL

The coil is made plug-in and has its own shield can. It consists of two bobbins from an old 455 Kc. i.f. tranny pushed close together, the junction between the two bobbins being a convenient centre tap and is earthed.

N.B.—The centre tap on the coil is not necessary for the operation of the



oscillator. Its function is to complete the circuit for the semi cap bias and modulating voltage.

The coil is tuned by a 50 pF. mica condenser which brings the frequency down too low, so a brass slug is used to reduce inductance and hit the required 455 Kc.

The use of plug-in coils makes other frequencies easily available if required.

#### CIRCUIT

The power supply and phase shifting network for the c.r.o. X amp. drive is perfectly straight forward and should need no explanation.

The oscillator should need no explaining except for the queer hook-up of the tube. This was done to reduce anode current.

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The heart of the device, the semi cap modulator, is a modified form of silicon diode and when a voltage is applied changes take place within the barrier which vary the effective capacity of the device. There are some catches, however. The applied voltage must always be in the back direction, otherwise current will flow. Therefore it becomes necessary to superimpose the a.c. modulating voltage on to a d.c. bias of such magnitude that the cathode end of the semi cap never goes negative. In this case the author used 9v. d.c. and a maximum of 6.3v. a.c. This gives a range of approx. 18.5v. which is adequate for the purpose. 9v. ±6.3v. r.m.s.

The method used of adding the a.c. to the bottom of the bias supply causes a small shift of centre frequency with change of range, but, since the range is usually set and left, this does not matter.

In the blanking pulse generator, a.c. is applied to the grid of the 6SQ7 and during the positive half-cycle the tube saturates, whilst during the negative half-cycle it cuts off. This produces a step change in the anode voltage which is passed on to the diode section where it is squared up. This negative going pulse is not quite half a cycle in duration and because of this, the sweep pattern has a slight curl at each end. This is of very slight consequence and can be disregarded.

The electronic attenuator and cathode follower should not require any explanation, apart from the fact that R.C. coupling is used throughout.

The reason for this is that to be of any use a sweep generator must not only produce a change of frequency which is linear with time, the output level must remain constant through the entire swept range.

Therefore tuned circuits and even r.f. chokes, anything in fact that can possess a response curve of its own, must be left out of the amplifying and

attenuating circuits. Valve anode loads are kept low to ensure linearity.

So much for the description of the circuit and the reasons why these things are so. Nothing now remains but to add a few notes for the constructor.

Choice of valves. For the oscillator and following stages, any tubes that have a remote relationship with the ones used in the original version should work except that the r.f. pentode used as attenuator should not be of the remote cut-off type. The bias required to reduce the output to zero will be excessive.

The best layout for the oscillator, attenuator, etc., section is a straight line, starting with the coil at the rear of the chassis and progressing forward through the stages, or, alternatively, the same line-up across the chassis. Any line-up which puts the output circuit near the oscillator should be avoided as this will lead inevitably to a leakage of r.f. from oscillator to output and will spoil the operation of the attenuator.

For the blanking pulse generator the choice of valves is strictly limited, the 6SQ7 or 6AV6 being the best choice here. Tubes with lower Mu are unsatisfactory unless the grid drive is raised to very high levels.

Silicon diodes were chosen for h.t. rectification because the power transformer was very small and the saving of a few watts of filament power was important. If you use a larger transformer there is no reason why a thermionic rectifier should not be used. Similarly, the 200  $\mu$ F. filter condenser was used only because it happened to be available. A normal type filter using a choke and a pair of 8  $\mu$ F. electrolytics would serve equally well.

The use of the 3,000 ohm resistor as a filter element reduces the on-load h.t. voltage to 80, but this is quite sufficient for the purpose. In fact upon testing the effect of raising the volts to 200, resulted in no noticeable effect on performance. True there was more output but this only meant that the attenuator had to be backed off to get the pattern back on to the c.r.o. screen.

One further note to add here is that marking techniques, as used for t.v. alignment, are unsatisfactory at this low frequency and possibly the most satisfactory method is to calibrate the sweep by applying a reversible d.c. voltage to the sweep width pot and calibrating the sweep range up and down, remembering to convert from r.m.s. to peak values when converting the calibration back to a.c. Remember also that a separate calibration will be required for each coil if you decide to make coils for other frequencies.

For those who use i.f. frequencies lower than 455 Kc. you will find that a single semi cap will not produce the required range of sweep, even two in parallel may not be enough. The best solution to this problem would be to add a v.f.o. and mixer and heterodyne the sweep to the desired frequency.

It is felt that the foregoing has got a bit long winded for one issue of "A.R." so will QRT now. If there is sufficient interest another article will be prepared on use of the sweeper. \*

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# The Overtone-Harmonic Crystal Oscillator\*

FRANK C. JONES, W6AJF

THE odd name of this crystal oscillator is an attempt to classify its unusual operation. Nearly all oscillators either work towards a harmonic output of the fundamental frequency of the crystal, or at an overtone frequency of this fundamental. This new oscillator does both; it oscillates at the third overtone of the crystal, then multiplies to the second or third harmonic of this overtone frequency. One triode tube or one transistor does the usual work of two in the design of crystal controlled v.h.f. or u.h.f. converters for receivers.

The circuit shown, Fig. 1A, is about as simple as can be designed, considering the functions involved. The circuit oscillates at the overtone frequency, 43.333 Mc, for example, in the cathode of the 6AK5. The values of L1 and C1 are not critical but should resonate at from 20 to 30 Mc. when using third overtone crystals of 35 to 48 Mc. L1 varied from 1 to 10 microhenrys in the test circuits with a small variable condenser of 5 to 30 pF for C1. It was found that values near 1 microhenry were too small for some tubes and crystals. A 4 microhenry radio frequency choke coil seemed to work effectively with all overtone crystals in the range tested (from 20 to 48 Mc.). The lower frequency crystals required a little increase in C1 value for maxi-

• The old fashioned "oscillator string" in v.h.f. converters may be a thing of the past thanks to this new oscillator circuit. An ordinary overtone crystal may be used to provide outputs in the 100-150 Mc. region with only one tube or transistor. An excellent 2-metre converter is described using the new circuit.

tuned to the output frequency, lightly coupled together with about  $\frac{1}{2}$  pF coupling capacity. The second tuned circuit would then be coupled to the mixer. The added selectivity at 130 Mc. would add 20 db. or more of attenuation to the undesired second and fourth harmonics, 86.666 Mc. and 173.333 Mc. A single high Q circuit at 130 Mc. will do a fair job, but two circuits make the problem easier to solve.

Many different tubes were tested in this circuit. The two types that produced the greatest output voltage at 130 Mc. were a 6AK5 triode-connected and a 6CW4 nuistor triode. An arbitrary value of  $\frac{1}{2}$  watt input was chosen, in comparing tubes. A variable B+ supply and 0 to 5 mA. plate current meter were employed. In general, the triodes with highest Gm at low values

The transistorised circuit of Fig. 1C functions in the same manner with very good third harmonic output at 130 Mc. when using third overtone 43.333 Mc. crystals. A diode r.f. voltmeter connected across the collector circuit, L2-C2 indicated output voltages of from 1 to 5 volts peak when using an 8.4 volt battery supply. This was less than half as much as obtained from a 6AK5 but the input power was considerably less than one half as much. This indicates better system efficiency for transistors, even neglecting tube heater power loss.

Several types of Philco transistors were tested in the circuit of Fig. 1C. The surplus type marked T2040, supposedly a 250 Mc. cut-off type, gave about twice as much 130 Mc. output as other types tested. No complete measurements were made as to exact input and output power. The 2N1745 transistor worked as well as the 2N1742 and 2N1744 so at the price differential the 2N1745 had preference. A 50 Mc. cut-off type 2N1728 would produce some output at 130 Mc. but only about one-third as much as a 2N1745. Since the circuit was set up for 130 Mc. output, transistors designed for v.h.f. or u.h.f. are necessary.

In Fig. 1C, the connection between L1 (4 microhenrys) and R1 should be bypassed as shown. If no bypass is used, R1 will offer enough impedance at the fundamental frequency of the crystal (approximately 14.5 Mc. for 43.333 Mc. overtone crystals) so oscillation will take place at about 14.5 Mc. The 130 Mc. output would then be greatly reduced. A radio receiver was used to check on 14.5 Mc. and 43.333 Mc. oscillation. The latter frequency is necessary since the transistor or tube only has to multiply by nine. Asking it to multiply by nine is too much!

The output circuits shown do not indicate any method of coupling to another circuit or to a mixer. The usual forms of inductive or capacitive coupling are suitable.

Overtone crystals are low-power type devices, so are suited for use in receiver converters where the r.f. power requirements are usually less than a milliwatt or two. When this circuit is used in a transmitter it should be followed by a high gain amplifier since an attempt to get a good fraction of a watt from this system will lead to crystal overheating and poor frequency stability. As long as the required output is in the low milliwatt region, excellent frequency stability can be obtained for either receiver or transmitter circuits.

## PROTOTYPE TWO-METRE CONVERTER

The 144 Mc. converter shown in Fig. 2 was built and used for a few weeks. It had good gain and low noise characteristics but was difficult to adjust properly. Because of the loss in the diode mixer, gain has to be added in

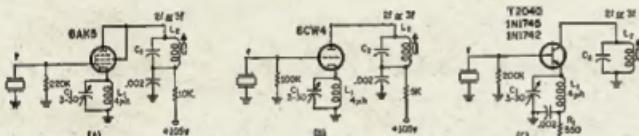


Fig. 1.—The Overtone-Harmonic Crystal Oscillator using a standard tube (A), a nuistor (B), and a transistor (C). Third overtone crystals of 35-48 Mc. range require L1 and C1 to resonate between 20 and 30 Mc. Output tank L2-C2 should resonate at desired if or of freq.

mum output at the second or third harmonic of 40 to 96 Mc. and 80 to 144 Mc., respectively. The values of C2 and L2 should resonate at the desired output frequency with either C2 or L2 being variable in order to take up the tube capacity and the detuning effect of C1.

In the writer's tests the main work has been done with 43.333 Mc. third harmonic crystals producing 130 Mc. output for coupling to a mixer. This provides the usual 14 to 18 Mc. if output for the 144 to 148 Mc. Amateur band. Since the tube or transistor does produce harmonics, the Q of L2-C2 should be as high as practical design will allow. Otherwise undesired harmonics will reach the mixer circuit and produce spurious signal responses from strong signals well outside of the desired Amateur band.

Good design would seem to indicate the use of two medium Q circuits

of plate current functioned best in this circuit. The 6AK5 and the 6CW4 produced from two to three times as much output at 130 Mc. as could be obtained from over a dozen triodes tried. Tubes such as 6BH6 and 6AU6 functioned fairly well when operated as screen grid tubes with the screen tied to the plate coil by-pass condenser. On the other hand, 6AK5s gave more output as triodes than as screen grid tubes in the tests to date.

This circuit requires good active overtone crystals for best results. Ten fundamental frequency crystals at about 11 Mc. were available for test. About one third of these would oscillate at the third overtone and produce a small output near 130 Mc., the fourth harmonic of the overtone frequency. The cathode feedback system is not a very efficient means of making a crystal oscillate at third overtone, so regular overtone crystals are necessary and tubes such as the 6AK5 or 6CW4 are preferable.

\* Reprinted from "CQ," February, 1963.

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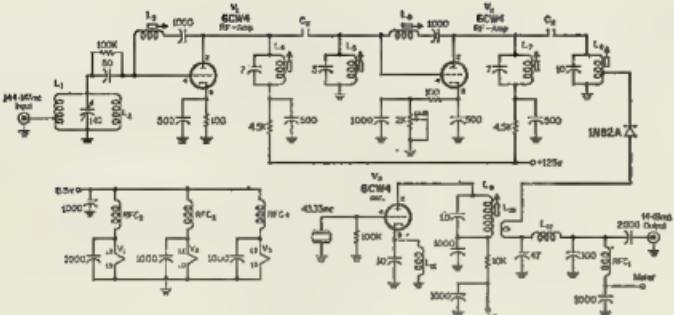


Fig. 2.—An experimental two-metre converter employing the overtone-harmonic crystal oscillator to produce 144 Mc. local oscillator output via a 43.33 Mc. overtone crystal. This circuit, although useful is not the ideal since the inductive method of neutralisation used is quite critical. A more practical circuit is shown in Fig. 3.

Cx—“Gimmick” capacitors. See text.

L1, L2—6 turns 18 gauge enamel, 3/16 in. diam., 1/4 in. long, tap L1 2 turns from ground.

L3, L4—Neutralising coils, 18 turns 26 gauge enamel, 3/16 in. diam., 5/8 in. long on ferrite slug coil form.

L4, L5, L6, L7—4 turns 18 or 20 d.c.c., 5/16 in. diam., 1/4 in. long on ferrite slug coil form. Centre tap L4 only.

L8—7 turns 22 enameled, 5/16 in. diam., 5/8 in. long on ferrite slug coil form.

L10—4 turns 20 d.c.c., hook-up wire on L8.

L11—4 p.f. r.f. choke.

R12—3 p.f. r.f. choke.

RFC1—0.6 mH. r.f. choke.

RFC2, RFC3, RFC4—10 turns hook-up wire closewound, 1/16 in. diam.

some other part of the converter when it is to be used with moderate gain communication receivers. One r.f. stage and one i.f. stage in a converter unit would be much less regenerative than one with two r.f. stages, but would have less image rejection. From four to six tuned circuits in the 144 Mc. band are needed to reduce image signals to a low value when using the 14 to 18 Mc. i.f. tuning range in the main receiver.

The two stage converter shown here has five tuned circuits with an operating Q of 15 or less. The input circuit for the best noise figure should be operated at low Q and tuned to the low side of the band or even below the band, so its image rejection effect is nearly lost. This doesn't mean that the tuned circuit without antenna and grid loading shouldn't be high Q. Heavy wire in the coil also more effectively grounds very strong input signals directly in the i.f. range of 14 to 18 Mc. A high Q here and in the other circuits, compared to the loaded Q, means less loss of the desired weak two-metre signal.

This converter has two nuvistor r.f. stages with inductive neutralisation, an IN2SA diode mixer and a single nuvistor crystal oscillator. The inductance neutralisation system is critical in adjustment even in one r.f. stage and becomes a real chore with a two-stage system. The three slug tuned circuits in each stage have to be experimentally adjusted and the degree of coupling into and out of each stage has to be varied in order to cover several megacycles bandwidth. The neutralising coils from grid to plate are always adjusted for minimum signal feed-through from a signal generator and without plate voltage applied to the r.f. stage. The r.f. coils are peaked for maximum signal. These adjustments seem to interlock and since inductance neutralisation of this type is theoretically only perfect at one spot frequency, the problem of getting several mega-

to upset the input r.f. stage on the first unit enough to cause r.f. oscillation. The two stages of r.f. also produced problems when a new high powered two metre transmitter came on the air nearby. The intermodulation effects were bad and the modulation rode in on carrier signals across the whole two metre band.

The converter shown in Fig. 3 has much better stability with some sacrifice in image rejection. The overall gain of the two converters was comparable and the noise figure about the same, however the adjustments in the one r.f. stage unit were easily made and the bandwidth was greater. The gain over the whole two metre band was much more uniform and changes of antenna s.w.r. had no adverse effects on regeneration, only on noise figure. The unit shown here was tried with inductive neutralisation but due to spot frequency effects, neutralisation was not effective over the whole two metre band unless the operating Q of the tuned circuits was reduced to such a low value that image rejection became poor. Capacitive bridge neutralisation of the triode r.f. stage has a nice wide bandwidth and the operating Q could be made high enough so that the four tuned circuits produced over 60 db. of image rejection.

The nuvistor mixer has considerable gain as compared to quite a bit of loss in a diode mixer, so one r.f. stage produces enough overall converter gain for most communication receivers tuning the range of 14 to 18 Mc. One r.f. stage with a gain control, especially if a remote cut-off type 6DS4 nuvistor is used in place of a 6CW4 nuvistor, takes care of intermodulation problems from nearby two-metre stations. This gain control, a 2,000 ohm potentiometer, is external to the converter in order to use it if needed when other local stations come on the air.

This converter, on a 2" x 6" copper-clad bakelite strip, was mounted in an inverted 17" x 6" x 3" chassis in back of the communication receiver. Several other similar converters for other amateur bands were mounted in this chassis along with a small regulated power supply delivering 165 volts up

### PRactical CONVERTER

This unit was finally discarded in favour of the unit illustrated in Fig. 3. A change in a.s.w.r. in the antenna feeder with weather changes or pointing the two metre beam antenna into another nearby antenna or tree seemed

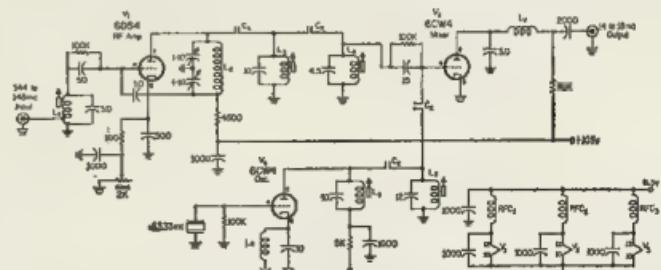


Fig. 3.—A practical 144 Mc. Nuvistor Converter using the overtone-oscillator. With this circuit a noise figure on a par with a 417A Converter can be expected. All capacitors are in pF. and all resistors are 1/2 watt.

Cx—“Gimmick” capacitors. See text.

L1—5 turns 20 d.c.c., 5/16 in. diam., 5/8 in. long on ferrite slug coil form.

L2—5 turns 18 gauge enamel, 5/16 in. diam., 5/8 in. long, air wound.

L3, L4, L5—4 turns 20 gauge d.c.c., 5/16 in. diam., 5/8 in. long on ferrite slug coil form.

L7—2½ p.f. t.v. video peaking coil.  
R12—4 p.f. r.f. choke.  
RFC1, RFC2, RFC3—10 turns hook-up wire, close wound, 1/16 in. diam.

to 20 mA. of plate power and 6.3 volts a.c. up to 1 ampere for heater circuits. A two section switch changes heater supplies and i.f. outputs to the receiver. Each converter connects to its own antenna so no switching is required on the inputs.

In testing this converter of Fig. 3 a grid dip oscillator is useful in aligning the tuned circuits to the approximate frequency. The four r.f. circuits were aligned to about 145 or 146 Mc. and the two oscillator coils adjusted to 130 Mc. before connecting the unit to a power supply. The r.f. stage plate tuning condensers were adjusted for about equal capacities in this step. A test signal generator in the two-metre band is used in the remaining tests. The unit is then connected to the power supply with the r.f. gain control dis-

sulated wire one or two twists may be needed.

A larger capacitor of from 0.68 to 1.0 pF is needed for coupling between the r.f. plate circuit and the next slug tuned circuit since the circuit is approximately centre-tapped by the two tuning condensers and associated shunt capacities. Neutralising is accomplished by adjustment of each plate condenser running one in and the other out by equal amounts so as to maintain correct two-metre resonance. By unbalancing these two capacitors, a fixed 10% ceramic 1 pF capacitor can be used to neutralise the nuvistor triode grid to plate capacity of about 0.9 or 0.95 pF. If both plate condensers are adjusted simultaneously in opposite directions one can watch the receiver S meter indication for best neutralisa-

The mixer plate circuit is coupled to the main receiver through a fixed tuned pi circuit consisting of a small 17 to 20 microhenry peaking coil and two capacitors. The ratio of these capacitors should be 5 or 10 to 1 between the low impedance side and the plate or high impedance side. The 3 pF. capacitor plus tube output capacitance, etc., adds up to about 5 or 6 pF. A two or three foot length of RG-59U coax line from the converter to the receiver will form the larger capacitance of the pi circuit. If the lead is shorter than this, a small capacitor can be connected across the output jack to build up the capacity to around 50 pF. If larger capacities are used with a smaller peaking coil to resonate at the middle of the r.f. range, the mixer output will not have as good a bandwidth. The values used in Fig. 3 produce a fairly flat 4 Mc. bandwidth.

The converter has the same noise figure as one with two 5842/417A triodes in a cascode stage and a triode-mixer converter in comparison with a diode noise generator. The 5842 tubes were in reasonably good condition in a converter normally used for two metre DX work.



Underchassis view of the 144 Mc Nuvistor converter using the Overline-Harmonic Crystal Oscillator. The input is at the first stage while the electron-type r.f. amplifier plate tuning capacitors can be seen to the left of the ED54 socket. The SCW4 oscillator input is at the corner of the copper-laminate board chassis.



connected entirely. A strong signal input will produce a signal in the i.f. output range if the crystal oscillator is functioning.

Fortunately this type of oscillator has a fixed oscillator circuit for the 43.333 Mc. overtone crystal so if the wiring is correct it will oscillate weakly at 43.333 Mc. in the cathode and grid circuits of the nuvistor oscillator tube. The plate circuit and its loosely coupled circuit are then peaked to produce maximum signal in the receiver from the test signal generator. Two tuned circuits of moderate Q were used to make sure that only the third harmonic of 43.333 Mc. (150 Mc.) was coupled into the mixer grid circuit. Too much oscillator injection voltage will usually produce spurious responses somewhere in the 14 to 18 Mc. output range; too little reduces the converter gain and causes some loss in noise figure also. The "gimmick" coupling condensers, short pieces of insulated hook-up wire are twisted together to produce coupling capacities in the range of 0.25 to 1.5 pF. A 0.5 pF. capacitance requires a single twist with small hook-up wire but with small conductor heavily in-

tion. For any one setting on one condenser, the other is adjusted for maximum S meter reading. Then adjust in small steps until the S meter reading is at a minimum. The unit shown was adjusted in this manner. Then when the r.f. gain control lead was connected and the gain control set at zero resistance, a .40 db. increase of signal resulted—about seven points on the meter.

The input circuit and antenna tap are always adjusted for best signal-to-noise ratio or noise figure. This means tuning this circuit not for maximum gain, but for best noise figure. The circuit will be set near 144 Mc for best noise figure over the 144 to 148 Mc. range. The two slug circuits between the r.f. stage and mixer are adjusted for best average overall gain in the converter over the whole two-metre signal range. A diode noise generator or test signal generator can be used for this purpose while tuning the main receiver over the range between 14 and 18 Mc., corresponding to r.f. signal inputs between 144 and 148 Mc. The grid leak condenser in the r.f. stage is only for tube protection when using a high powered transmitter nearby.

## TECHNICAL ARTICLES

Readers are requested to submit articles for publication in "A.R.", in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

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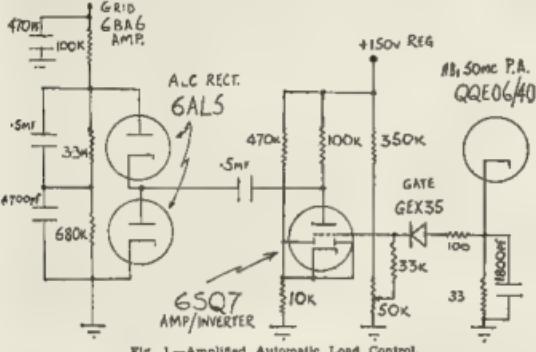


Fig. 1.—Amplified Automatic Load Control.

for some time but has now modified it as shown in Fig. 1. A diode gate has been added to the design.

This is the way in which it works. The diode is biased so that it does not conduct until the cathode voltage of the AB1 linear amplifier rises with grid drive to a point just before grid current flows. As we all know, grid current in Class AB1 operation is most undesirable, leading to severe distortion. Any excursions of cathode voltage beyond this point are passed on to the grid of the 6SQ7 tube which amplifies it and inverts the wave form into a negative going one. The 6SQ7 tube is biased to near cut-off in order to make maximum use of the characteristic curve (similar to class AB1) as only positive going wave forms are applied to the grid. This negative wave form is then applied to the 6AL5 a.c. rectifier tube and the dual time constant network providing an a.c. voltage to the grid of a 6BA1 amplifier. In the VK3AHL transmitter, this amplifier is used to amplify the intermediate frequency s.s.b. signal at 6.34 Mc.

Different ways of setting the delay bias can be used. One method is to feed tone or carrier to the final amplifier, increasing the drive until the point of grid current is reached, then noting the final cathode voltage just below this point. Switch the final off, end with a high resistance voltmeter or v.t.v.m., set the delay control (50K potentiometer) to the same voltage as noted for the final cathode. The voltage between the diode gate, cathode and ground is the delay bias and these are the resistors of measurement.

Another method is to connect a high resistance voltmeter or v.t.v.m. between the 6SQ7 cathode and ground. With the potentiometer wiper to the ground end increase the drive to the final as before to just below grid current. Take note of this voltage and advance the delay control until the point of increase in the voltmeter reading is reached. This is when the cathode of the delay diode

for some time and in the meanwhile got v.o.x. operating complete with anti-trip.

He then decided to remove the noise limiter and found that the v.o.x. now would not operate in a satisfactory manner. It developed a chatter.

This is explained by a sharp transient as the v.o.x. disabled the receiver passing through the receiver and operating the anti-trip circuit. This immediately causes the v.o.x. to drop out, the cycle is then repeated and the result—chattering v.o.x.! Replacing the limiter cured the trouble.

You may recognise these symptoms if you do, you will be interested in the limiter which appears in the R.S.G.B. Handbook, third edition, page 97, figure 47. On the diagram in the Handbook, the numbered designations on the SAL5 tube are wrong, "2" and "5" being transposed. For those who have not yet obtained a copy of this valuable book, Fig. 2 shows the corrected circuit.

## A LAST REMINDER

Did you participate in the "CQ" World Wide S.s.b. Contest? Have you sent your log in yet? After spending all that time getting those points, and it was hard work that week-end with such poor conditions, it would be a pity not to submit your log. The logs must be in the hands of the "CQ" Sideband Editors, 12 Elm Street, Lynbrook, New York, U.S.A., not later than June 15, 1963. Airmail it now, this is possibly your last chance.

becomes positive with respect to its anode. Beyond this point, the grid voltage of the 6SQ7 is free to rise and so the cathode voltage follows.

Automatic load control is a must in every sideband transmitter. There are simple ways of installing it and others are a little more complicated, but it pays you back many times. Makes your signal more readable even when you get excited calling that rare one! Do you use a.s.c.?

## A BUG SQUASHER

Here is a bug squasher that was found quite by accident. George VK-7XL had put a noise limiter into his receiver and found that it did not perform very well on sideband. It did reduce the noise, but in reducing it to the same level as the signal it introduced quite an amount of distortion. George left the limiter in the receiver

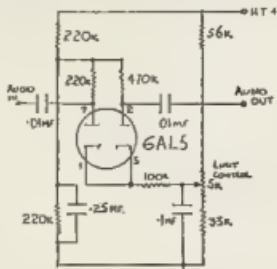


Fig. 8. Aerial Aerial View. Notice 3 houses.

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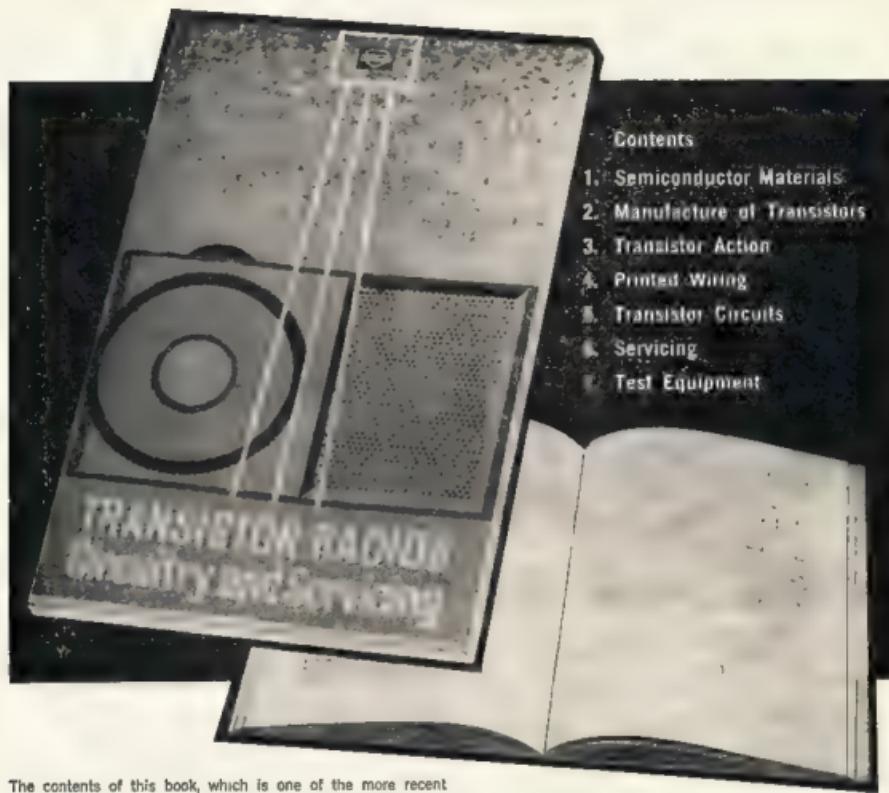
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Practical considerations are emphasised throughout the book, which is priced at 5/-, plus 8d. postage, and is available from most booksellers and from Mullard Offices and Distributors throughout the Commonwealth.



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# ROSS HULL MEMORIAL V.H.F. CONTEST 1962-63 RESULTS

The Federal Contest Committee takes pleasure in presenting herewith the results of the 1962-63 Ross Hull Memorial V.h.f. Contest. Many comments have been received regarding the Contest rules and the scoring system and the Contest Committee hereby acknowledges those who so contributed. It is the intention of the Contest Committee to sum up all comments submitted by contestants and if warranted submit a recommendation to Federal Executive. At the same time, contestants must realise that it would be impossible to compile a set of rules that would be one hundred per cent acceptable to everyone, and so a compromise has to be made somewhere along the line.

Honours for this year go to VK4ZAX whose mammoth score of 8,797 points was indeed a really fine individual effort. Our congratulations also to the other award winners, and in conclusion we wish to thank all those contestants who submitted logs.

—Federal Contest Committee, W.I.A.

## TROPHY WINNER

VK4ZAX—D. R. Horgan .. 8797 pts.

## AWARD WINNERS

Section A—Transmitting	Open
VK3AAU—D. D. Tanner	381 pts.
VK4BZ—D. B. Hughes	2824 "
VK5TN—B. G. Tideman	1867 "
VK6VV—B. J. Clarke	3150 "
ZL3RK—T. J. McKenzie	1500 "

Section B—Transmitting	Phone
VK1VP—E. Penikis	1088 pts.
VK2ZCF—R. C. F. Norman	4303 "
VK3NJ—K. H. Meallin	1277 "
VK4ZAX—D. R. Horgan	8797 "
VK5ZDR—M. J. McMahon	5102 "
VK6ZAA—W. J. Howse	1824 "
VK7ZAQ—W. J. Emmett	1955 "
VK8AU—R. A. J. Taylor	502 "
ZL1AKY—G. S. Reed	1010 "
JA1CYV—H. Yamada	20 "

Section C—Receiving	
WIA-L2242—D. J. Patterson	3104 pts.
WIA-L3076—R. H. Young	1109 "
WIA-L4028—T. A. Lane	2248 "
VK5—Miss J. Martin	12 "

## INDIVIDUAL SCORES

Section A	
VK3AAU—Ripplebrook	381 pts.
VK4BZ—Mt. Gravatt	2824 "
4PU—Woombye	1384 "
VK5TN—Kings Park	1867 "
VK6VV—Geraldton	3150 "
6WG—Albany	2114 "
6BE—Kalamunda	1735 "
ZL3RK—Christchurch	1500 "

Section B	
VK1VP—Canberra	1098 pts.
VK2ZCF—Croydon	4393 "
2ZLP—Armidale	2279 "
2ZFB—St. Marys	2009 "
2HE—Turramurra	1126 "
2ZFS—Goonellabah	948 "
2ZDA—Miranda	692 "
2ZPJ—Wahroonga	563 "
2ASI—Inverell	412 "

2ZBP—Illabo	400 "	SNW Check Log
2BQ—Warrawee	344 "	5TM Check Log
2RX—Bexley North	341 "	5CL—No mileage shown, disqual.
2ABR—Milperra	163 "	5ZSG—No mileage shown, disqual.
2ZPB—Ashfield	74 "	VK6ZAA—Mt. Pleasant .. 1824 pts.
VK3NJ—Essendon	1277 "	6ZDS—South Perth .. 1395 "
3ZGP—Fawkner	831 "	6MM—Nedlands .. 841 "
3QV—East Malvern	864 "	6ZAL—Bunbury .. 420 "
3ZNB—Anderson	677 "	6ZCD—Albany .. 365 "
3ABP—Altona	436 "	VK7ZAQ—Lenah Valley .. 1955 "
3ZLP—Wallington	333 "	7ZAV—New Norfolk .. 548 "
3FN—West Preston	129 "	7ZAX—Hobart .. 112 "
3ZNR—Boronia	122 "	7ZAC—Lenah Valley .. 110 "
3ZGL—Keon Park	95 "	7MY—Check Log
3AIG—	85 "	VK9AU—Port Moresby .. 502 "
3ZIA—Check Log		ZL1AKY—Papakura .. 1010 "
3ZGF—Check Log		JA1CYV—Tokyo .. 20 "

## Section C

WIA-L2242—D. J. Patterson,	Sydney	3104 pts.
WIA-L2211—R. C. Abernethy,	Sydney	1479 "
WIA-L3076—R. H. Young,	Brighton	1109 "
WIA-L3065—I. D. Thomas,	North Clayton	1032 "
WIA-L3035—M. R. Cox, West	Heidelberg	601 "
WIA-L4028—T. A. Lane, Bris-	bane	2248 "
VKS—Miss J. Martin, Wild	Horse Plains	12 "

## Book Review

### RADIO AMATEUR'S HANDBOOK (A.R.E.L.)

The fortieth edition of this long accepted standard manual of Amateur practice closely follows the layout of previous issues. The new style typeface introduced in the previous issue has been retained. If anything, the photographs are even better in this new issue.

As usual, the constructional articles are the best from "QST". New material is mainly on linear amplifiers. There is additional material on 432 Mc. equipment, which, with the release of this band to Australian Amateurs in the near future, will be of especial interest to those whose main interest is in the v.h.f. regions.

This reviewer has always found much of interest in the catalogue section, and this edition is again most interesting. One noticeable feature is the tendency towards higher prices for some equipment advertised.

The book contains twenty-five chapters and is well indexed, facilitating rapid location of any matter required, from basic theory upwards.

It is impossible to find words to describe this manual that have not been used before. We can only suggest you have a copy on your bookshelf.

Our copies from McGill's, 182 Elizabeth St., Melbourne, and Technical Book Co. Pty Ltd., 282 Swanston St., Melbourne. Price \$1.6 plus 2/6 postage.

## VK9LA—COCONIS ISLAND

VK9LA is operated on Cocos Island by Lionel Allen, a radio technician employed by Dept. of Civil Aviation, who now has every reason to believe he is operating one of the world's rarest DX stations. He is the only active licensed Amateur on the island (despite what appears to the contrary from time to time). (VK9RC is also on the island, but at the end of April was inactive.)

The equipment in use at VK9LA consists of an HT37 tx (acquired Dec. 1962), Drake 2A rx, TH4 triband beam antenna.

Operation is confined to 14 and 21 Mc.—mostly 14 c.w. and phone. VK9LA averages approx. 10 contacts per day and is active most days. Strange to say, Lionel states that he hears very few VK signals and makes the unusual plea for VK stations to listen for him (from 1200 G.M.T.) and give him a call whenever heard. (He would especially like his first QSO with VK1, which he says "would be DX for me".)

VK9LA will be on Cocos until late December 1963, after which he will return to VK6. (The Allen XYL and children are on the island with Lionel—their eldest son is at high school level in his education and studies by correspondence—not so bad says the OM!)

All contacts and s.w.l. reports on his signals are QSL'd 100 per cent. Cards for VK9LA can be sent direct to P.O. Box 5, Coco (Keeling) Islands or via the VK6 (W.I.A.) Bureau.

Amateurs everywhere owe a debt of gratitude to Lionel Allen for his daily efforts to keep Cocos Island on the Amateur Radio map via VK9LA. EERHS/5/WIA-L304.

# W.I.A. FEDERAL PRESIDENT'S ANNUAL REPORT, 1962-63

It is my privilege to present my report on the activities of the Wireless Institute of Australia in particular, and of the Amateur Service in general, over the last twelve months.

This year has been one of re-organisation rather than of any great achievement—the last Convention in 1961 having provided a new line of thinking—that the time is fast approaching when we must have a more realistic Federal Constitution so that the future growth of the Institute may develop along sound and progressive lines. A draft was presented at the Convention indicating two ways of achieving our objective—there are probably others also—and your Executive has discussed ways and means of handling the problem which has led them to the conclusion that the best way is to approach our legal advisers and propose a bill to be introduced into Parliament to discuss the matter legally and in greater detail. This proposal will no doubt receive your attention later in this Convention. Unfortunately due to circumstances beyond our control, Committees did not receive the minutes of the Parish Convention until late in the year, and consequently your Executive has not completed all the action required in the time available. I trust that this will not occur in the future and every endeavour will be made to see that action by all parties is completed between Conventions.

Touching on administrative matters, the Secretary continues to deal with large volumes of correspondence, his help is appreciated, but I cannot help but remark that Federal Councillors may ease his burden by a more careful study of the Constitution and Policy Book. Two-thirds of the time of Executive is spent up with correspondence and quite a large proportion of which may be matters dealing with laid-down policy if this administrative burden can be cut down it will leave Executive more time to deal with outstanding directives of the A.R.C.C., Commissions and other projects for the enhancement of the Institute as a whole. Your co-operation in this regard would be of great benefit to all concerned.

I am very pleased to announce that the long and constructive work of the Vice-President, Mr. Max Hull, was rewarded in the year by his election as Life Member of the Victorian Division, an honour just and well deserved for his long association with the Executive and his terms as the Federal President. His years in this office were trying ones, but handled with tact and skill. We look forward to expect from him, I also thank him for the support he has given me this year and I know perhaps more than anyone just how valuable that has been. I cannot thank him enough for his guidance and for letting my thanks to Mr. George Glover, a Past President, who, although not an official member of the Executive, has continued to support the Executive and provide it with his almost invaluable memory for past events and his assistance also gained from long service in Institute affairs.

Membership of the Institute has continued to grow although I feel there is room for a great deal of improvement in this area. It is most important by the time of the next International T.U.T. Conference, which may be only a year or two away, the Institute should be representing the bulk of Australian licences. At the present this is little more than 50 per cent. A significant increase can be improved with concerted efforts by Divisions. A comparison of the membership figures given at the last three Conventions, compared with present figures, are of interest:

1960 1962 1963

M. L. M. L. M. L. M. L.

VK5 758 1185 1087 1840 1280 1277 1282 1427

VK3 228 368 348 1211 728 1342 1282 1328

VK4 155 363 280 410 288 449 288 469

VK5 369 397 444 454 472 530 541 565

VK6 112 217 141 261 197 287 216 317

VK7 181 123 148 130 176 156 174 164

VK8 25 68 36 78

Total 2236 3467 3067 3673 3110 4141 3256 4314

The membership figures above cover all grades of membership and not just licensed members, so that it can readily be seen that we must continue to encourage the wider participation in the work of our membership. The means of doing this is a policy matter, but one for the Divisions to actively pursue in their own interests. It should be noted that the technician's licences have continued to follow the broad growth indicated at the last Convention, and they still out-number the A.O.C.P. holders in current exam results. We must make every effort to pursue the policy of encouraging them to take a full licence.

I expect that since the inauguration of the High School Radio Club scheme in N.S.W. this year and just starting to make strides in other Divisions, our overall membership will benefit, as well as providing a most useful service to the community at large. Every effort should be made to make this an Australia-wide scheme and those Divisions who have not yet commenced activities in this sphere should start as soon as possible. I have not yet heard any response to our appeal for "Amateur Radio" for donations to the Divisions of gear for their Clubs, but hope that every Amateur will respond, so that those actively running the Club will have your support in a practical way.

The Executive have had two major meetings with the P.M.G.'s Department this year—the first to discuss and modernise the regulations for Amateur Stations and the other to discuss matters arising from the last Convention. In respect of the first meeting the results are already evidenced in the new addition of the Handbook is on the Booksellers' shelves. In most respects, any alterations suggested by the Executive were accepted and included, and consider the present situation is big improvement over the earlier ones. There are still a few contentious points which are still to be tackled, but these will be progressively corrected as necessary. Regarding the second meeting, it is too early to say whether our prepositions will be accepted but you may rest assured that every effort has been made to put our case in the strongest possible terms.

During the year we have maintained liaison with the A.R.C.L., the N.Z.A.R.T. and the P.M.G. We have exchanged the Handbook books with the R.S.G.B. and Divisions will most likely have been asked by now for their requirements. They will be available at a cheaper rate than possible through the usual bookseller and can easily be made prior to going into Federal funds. Through various wires of some of our Council we have been able to keep contact with the J.A.R.L., the M.A.R.T. and the R.S.G.B. I am sure our ambassadors in these Societies informed us of some of our actions. All members of the Institute will be interested to hear that the R.S.F. of the U.S.S.R. has been accepted as a member society of the I.A.R.U. This membership may well result in a better understanding of affairs between our Uncle Sam in Amateur doings, and be the means of lifting some of the bans that still exist.

The production of "Amateur Radio" and the "Call Book" has continued under the able leadership of the Editor, Mr. Ken Cocking and the standard of both has been maintained despite the continued upward spiral of costs. The "Call Book" was a little later than usual this year but this was due to a competition by the P.M.G. for all licences resulting in more correct listing of all Amateurs in Australia and its Territories. There will always be some mistakes but a note to the Editor can correct any errors if the individual concerned will put paper to paper. The Publications Committee has been instrumental for carrying on a very onerous task in such an efficient and expert manner. The Editor and some of his Committee have attended some Executive meetings during the year and this has resulted in a better understanding of each others problems. I am sure that the Victorian Councillor will have a more detailed report to make during the Convention, especially in

relation to the financial state of both publications.

The Federal station of the Institute, VK5KWA has received some attention during the year and has been installed in such a way that external broadcasts can soon be made. I must thank Mr. Harry Kinsler, Past Vice-President, who generously donated a VK5KWA receiver for Federal use. Plans are now being made for an operating schedule for VK5KWA so that Divisions and individual members may keep themselves informed on matters of Federal nature.

During the year, Mr. Tom Sirraughair who has been responsible for all work connected with the production of new certificates for various purposes, was appointed as the Contest Officer. He has done a superb job in getting all certificates owing and outstanding to local and overseas Amateurs from W.I.A. Contests have been issued, and I am happy to report that the task is completed. He will retain the position I hope, as there will be any complaints in the future about competitors in Contests not receiving their certificates in a short time after publication of the results.

Apropos the subject of Contests, the N.Z.A.R.T. because of the time factor, extended their year VK5KWA Contests to include the Oceania. This matter was discussed at the last Convention, but a decision had not been reached by Council so that the N.Z.A.R.T. did not advise us until after the rules had been published. We have not yet heard whether the change of rule will be a success. The care conduct of Contest affairs has this year been taken over by the Queensland Division for a period of three years, and I am sure they will very soon give the service their personal best in this field.

The issuing of awards by Mr. Kiesick have been dealt with in his usual prompt way and judging by the number signed this year, there has been no falling off in applicants. The QSL Officer, Mr. Ray Jones, has carried out his job with expedition and economy. His task has been made a bit easier by having a special QSL post office box nearer his home—this has also meant a bit more room in Box 311W!

During the year, the Institute was invited by the P.M.G. to nominate a representative to sit on the Space Communications Committee set up by the P.M.G. to assist in association with in relation to other users of the frequency bands. Mr. Arthur Tinkler represented the W.I.A. on this Committee, and several meetings have been held to discuss the various problems involved in propagating information to make recommendations on behalf of Australia at an international meeting to be held in Geneva later this year. It is probable that further meetings will be held prior to the conference, and the committee from the beginning overseas, and it is this committee which will determine his brief. I have every confidence in Mr. Tinkler's ability to properly represent the Institute's interests which he has amply demonstrated in the past on the P.M.G.C.

Arising out of the last Convention, it was decided that a sub-committee consisting of a member of Executive and the VK5 and VK3 Federal Councillors should visit the Canberra Radio Society to discuss the formation of a Division. Advice was received that the Society that they did not wish to pursue this idea at the present time, so it was not

(Continued next page)

## WIRELESS INSTITUTE OF AUSTRALIA—FEDERAL EXECUTIVE Balanced Sheet as at 31st February, 1963

Current Liabilities—		
Accounts payable	£23 11 1	
Convention Fund	4 10 4	
Trust Fund	200 9 8	
ITU Fund	636 10 8	
	£276 1 8	
Accumulated Funds—		
Balance 1/3/62	£270 18 1	
Less excess of Expenditure over Income for year	8 3	
	£262 8 10	
	£1548 10 7	

Current Assets—		
Cash on hand	£31 0 0	
Commonwealth Savings		
Banks	1897 17 11	
Accounts receivable	4 0 0	
Stock on hand	311 15 10	
	£1304 13 8	
Paid Assets (at cost less depreciation)—		
Furniture and fittings	£15 9 10	
Typewriter (No. 1)	12 5 0	
Typewriter (No. 2)	18 12 0	
Duplicator	117 9 0	
Trophies	18 12 0	
Equipment, VK5KWA	72 0 0	
	£1548 10 7	

£1548 10 7

# YOUTH RADIO CLUBS

What a wonderful story to hand this month from Port Pirie! (N.B. It's just a geographical coincidence it seems to be V.R.C.s left over from Past S.E.O. President of Port Pirie Amateur Radio Club.) "Following the reformation of our club towards the end of 1962, a public meeting was held to estimate the degree of interest in the town in the formation of a Y.R.C. The local press provided publicity in advance and the headmaster of the high school gave the scheme plenty of promotion within the school. The final result was the formation of a Y.R.C. with no members, but with an membership fee. Following the first meeting, on March 8, the headmasters of all the schools were approached and supplied with details of the Y.R.C. scheme. In every case we received the active support of these people. Local press also came to our help with quite an extensive coverage, and as a result we enrolled 56 members at our first meeting, later increased to 92!

"A major difficulty at this stage was the provision of suitable accommodation, since the P.A.R.C. had no room to挪用 our meeting place. However, an appeal to the City Council for assistance was successful and we were granted the use of the radio room at the local airport. This airport was formerly R.A.A.F. and had complete radio and electronic equipment. This room has been made available to us for £1 per year. Appeals in the local papers and over one of the local radio stations brought some tables and chairs, and a supply of old radios for working.

"At present meetings are held over a fortnight, since the P.P.A.R.C. only has about a dozen members and due to business and other reasons, not all of these can devote regular time to these classes. Each session is split into sections to hold the interests of younger members. A good lecture on basic theory is followed by an Morse lesson, and then the remainder of the evening is devoted to practical projects.

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"Another P.S. from Port Pirie. Bert sends me a circular issued to parents. This has many sensible points—non-profit operation, free issue of parts but a register kept, privileges for members making best progress, small membership fee, regular financial audit, strict supervision and safety measures, parents invited to view site. This is a fine story with a moral for all similar centres. Heartiest congratulations to the members of P.P.A.R.C., the City Council, the members of the V.R.C. and the moralists. Amongst others please note our special thanks if you can't manage a Y.R.C. yourself, form a group.

Further good news from VK4 and VK5. VK5ER has accepted his job as Y.R.C. Co-

ordinator in W.A. and State 4SA has been appointed in Queensland. Congratulations on your fine spirit, fellows, and I hope your Division backs you up as well as appointing

you Awkward question—if you count 1, 2, 3, 4, 5, 6, 7, what number is missing?

Further news from VK3 is very encouraging. 4 Y.R.C. Clubs registered! Sorry to hear that the VK3 Co-ordinator, Ken STYL, has not been in good health, but that should cheer you up. Ken Ken has had a very encouraging letter from the Victorian Education Department, which State is going to be first to have Secondary Schools on V.H.F. for Science Teachers.

An SOS. Brother Colin at St Francis' College at Leeton hopes to develop a transmitting type club at his College, which is a boarding school. Any Amateurs in the area who can help are asked to contact Brother Colin. Further reference to Scouts. Negotiations are in hand with the N.S.W. Branch of the Boy Scouts Association to do up a scheme whereby Scouts will receive a certificate of achievement for V.H.F. records which are now being checked. Openings in the two lowest v.h.f. bands appear to have been more consistent this year and activity is on the increase. Many new contacts have been made with overseas stations and the increase in operation leads one to suppose that these bands will soon become as popular as the higher h.f. DX bands.

Club leaders please note. Doug Williamson, of Bass Hill High School (Sydney) is in charge of Elementary Certificate training and testing. Keith ZAKK, of Booragoon High School, Booragoon, looks after Amateur Certificate, and Ralph EZRS, of Beaumaris High School, Sydney, is in charge for Intermediate.

What about pushing this scheme in your State? Club leaders please note. Doug Williamson, of Bass Hill High School (Sydney) is in charge of Elementary Certificate training and testing. Keith ZAKK, of Booragoon High School, Booragoon, looks after Amateur Certificate, and Ralph EZRS, of Beaumaris High School, Sydney, is in charge for Intermediate.

Randwick Jottings from VK1LH. Since I am home for a better spaced out period, First Auburn Senior Scout Radio Club should be on the air before long. Jim JAMQ is instructor and has donated a c.w. rx. Rex IVA has made available a c.w. rx. His old troop—now a Scout Troop—has an amateur type set to know; But more help is still needed from the many Amateurs in Auburn. Mr. Makewell, of Ransby, has donated a quantity of gear including two v.h.f. intercom amplifiers which are in use. More help is still needed at the hands of Joe JZR. Can anybody else help with construction (just a little). I'm snowed under myself, and would appreciate it greatly.

Final note from VK1LH at Lynham High. The club, headed by George JGB, of our school club, has been on the air for two contacts. One was with 2 watts of good s.a.b. and the other with a problematical 30 watts. Further alignment proceeds, but George is happy.

Our monthly message again. If you can't manage a Y.R.C. alone, form a group. Th. Ken IKM

## W.I.A. PRESIDENT'S REPORT

(Continued from page 14)

necessary for the sub-committee to travel to Canberra. However, I took the opportunity during a business visit to meet the members of the Society and discuss any problems with them. It was evident from the discussions which followed that it was not possible at present to form a Division. However, other matters of interest to the Society were discussed and I was assured after the meeting that my visit was well worth while. I hope, during the next twelve months to be able to meet with one or other Divisional Secretaries and discuss any of their problems in person.

Mr Dave Rankin has continued to deal with the activities in the v.h.f. bands and since the publication of his article in "Amateur Radio" he has received a number of applications for v.h.f. records which are now being checked. Openings in the two lowest v.h.f. bands appear to have been more consistent this year and activity is on the increase. Many new contacts have been made with overseas stations and the increase in operation leads one to suppose that these bands will soon become as popular as the higher h.f. DX bands.

At the present financial state of the Executive, I refer you to the Balance Sheet for the current year which is attached to this report. The expense for the operation of the QSL Bureau have doubled due to the increase in members and the cost of re-printing the Remembrance Day Certificate. This resulted in a slight deficit for the year. As far as I am aware, there is still several other certificates to be printed for the ensuing year is likely to be a slight deficit unless additional income is forthcoming. I particularly wish to draw your attention to the Treasurer's report, although no doubt this will be referred to during the year, but despite the foregoing, our operating for the year will still reveal healthy state of Federal finances.

This Executive was composed of some older members plus the advent of two new members, Mr. Ted Seddman and Mr. Ian Macmillan. Both of whom have now moved into the Executive sphere and are assisting in the work and deliberations. I trust they will continue to supplement the knowledge and experience of the older members as well as introduce a new complexion into the discussions. This year the Executive held 13 meetings and the attendances were as follows: W. Mitchell 13, M. Hull 13, J. Lancaster 10, D. Rankin 12, A. Tinkler 9, A. Seddman 8, Macmillan 8, G. Glover 13 (co-opted), T. Struthairn 7 (co-opted), R. Boase 3 (co-opted).

It is only fair to say that Mr. Tinkler has been away interstate and overseas for a considerable period of time and has been unable to attend regularly. In addition, all Federal Councillors of the past year, most of whom have not been re-elected, for their support and attendance to Federal matters on behalf of their Division, do not do so. Our Divisions would be wise to give urgent consideration to the appointment or re-election of Federal Councillors for a period greater than twelve months. It is very difficult for a new Councillor to pick up his duties and become acquainted with Federal affairs in a short twelve months before a new man is appointed. To all officers not mentioned by name, I express my thanks for a job well done and I hope they will continue to serve our Institute in the future as sincerely as they have done in the past. This year has not produced anything startling in the way of privileges or concessions, but it has been a year of organisation and building foundations. The work done in the foundations laid this year in the various Amateur fields will lead to a constructive year ahead for those now charged with continuing the Amateur administration through the Institute. My personal efforts will not be spared to promote the growth of the fine edifice we eventually hope to erect.

—W. T. S. Mitchell, Federal President.

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# S W L

OHO, KL7, ZD8, ON4, LZ, FF8, VP8, XW8, SH3, WO

Sub Editor: J. M. (Mac) HILLIARD, WIA-L3074

57 Gardenia Street, Blackburn, Victoria

ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

Recently one of our members was awarded the N.Z.A.R.T award for having confirmed all 2L districts on 50 Mc. What we would now like to know is that VK award on 50 Mc available to members of the S.W.L Groups or proof of having conversations from all VK call areas? So if Federal Executive could inform us we would greatly appreciate it very much. We would have a good time if the awards are made available to us it will certainly stimulate us in our hobby and at the same time encourage more listeners to our v.h.f. bands.

## VICTORIAN S.W.L. CONVENTION

This is an exclusive report on the 1963 Victorian S.W.L. Convention held during April at Ballarat. We were disappointed that no country members turned up at the Convention this year. The first night of the Convention saw the arrival of three Bands which struggled to Ballarat with a petrol pump that refused to pump. What member got involved with a YL and vanished all evening? This lad was detained by the YL that he found the hotel room for the night. He arrived back early next morning. The fellows saw everything that opens and shuts in a tv. station when they inspected BTVS and heard some of the amusing situations that can arise in a tv. studio.

It appeared to simple the way Ron ZEER drove in 144 Mc stations from Melbourne and Mt Gambier. There was a stunned silence of amazement when the boys saw the layout at VK3SHW. It was interesting listening to 29 new DX when the signals were so strong. A number of awards designed for that band and other bands by pressing one button. We thank the two leading Amateurs of the city of culture—3SHW and ZEER—for their hospitality to the S.W.L.'s during the Ballarat Convention. All work for formation of characters should be sent to L3006 your Convention reporter.

It is very pleasing to see so many of our members have obtained their tickets recently. Most Amateurs graduate from being S.W.L's. This no doubt is the reason that we are always seeing new faces in the Group, with only a few of the old regulars remaining within the Group.

We would be very pleased to receive any photographs that some of you may have taken of your shack or antenna etc. Any snaps used in the R.A. will be returned to you. How about it? See what you can dig up.

Maurice L3233 is really giving the DX Ladder a shake at present. So beware you fellows at the top of the ladder. Recently he received a QSL for a report that he sent off 34 years ago. So just now I am not sure that you should not give up hope for the rare QSL.

On Friday, 3rd May, a number of us were at the Mourabin and District Radio Club's get-together. We would like to thank them for inviting us for the evening.

Craig Cook, our publicity officer for the Sunday broadcasts, would like to advise who send him reports to him. He is the following individuals:—time band mode. This will assist him very much indeed if you will all do this. Thank you.

Now that we have more members with v.h.f. gear available, what do you say if we form a regular v.h.f. monitoring service? Anyway, give me your ideas on the subject as soon as you can.

We were given to understand that the V.H.F. Group would be willing to construct converters for the S.W.L. Group. Does this offer still stand? We have at least one member interested in 1400 Mc. Are there any other starters for this band? Keep in mind that next year we will be getting 420 Mc.

Ian L3095 comes forth with an interesting list of his activities. Ian has not been active on the air for quite a long time due to his dependence at Colac and he does not have his rx with him at present. Was very pleased to hear from you, Ian. Hope you can get your rx going at the new QTH. How do you like living in the bush these days?

Greg L3136 has been very active on the band and has been receiving a few QSLs. At the moment he is getting ready to erect a beam. Bet you jump ahead once you get the beam working. Greg.

## NW SOUTH WALES

Don L3022 has been very busy of late, however he has managed an occasional peep at the bands. Over the Easter period Don made contacts with VK4, WIA, WIA-L3074 and PJ5CG from Caroona Island. Don would like to know of more details of FO5AA and KC4AAC. At the moment Don is thinking that unless he can put a beam up, he will be unable to cut in much of the DX. Yes, I think you have to be a bit of a ham to succeed.

Back in 1962 he used to have a t.r.l. rx and used to hear all the DX about the place. Conditions are certainly a far cry from those days! Don. And it looks as though it will be several years yet before the sunset cycle starts its upward trend again.

Chas L3211 has been rather busy of late,

however your scribe was able to contact him via the 80m-cm line when in Sydney recently via the moment Chas is busy modifying his tv. set. QSLs that Chas has received are from LURGP, VR18, ZETJR, YUSYU, JA1 and several 50 Mc cards.

**QUEENSLAND**

Our good friend Afton L3125/VK4 comes forth with another very interesting letter. At the moment Afton is nursing a badly injured foot which was the result of a motor boat accident on the Tinaroo Dam, near Atherton. Very sorry to hear of your mishap Afton and hope that you will be up and about again before long.

Afton has been doing a lot of listening on 7 Mc. recently and has been hearing some nice DX on s.s.b. His only QSL for some time was from HP3FL. Afton is thinking of disposing of his HQ170 in the near future. Best of luck Afton and I will tell the boys about that little matter.

The recent heavy rains in North Queensland have prevented him from moving around much. Thanks for your letter Afton, and maybe I will see you within about 18 months.

## SOUTH AUSTRALIA

Darrell L5041 has been very active on 14 Mc s.s.b. recently, but is complaining about only getting 31 QSLs from 100 reports sent out to date. What do you think about that regard? we all have that trouble. He now has an AR8 ex going and he soon hopes to have converters going for SU, 144 and 265 Mc bands. That is good news old boy, it is high time that we had a few S.W.L.s on the v.h.f. bands. QSLs received by Darrell are from W8CLF and K6QKE.

## WESTERN AUSTRALIA

Peter L6021 has as usual been keeping VKS on the map in the S.W.A. department. Peter is now 14 Mc. He is a fair bit of late for a change. But he was watching all the bands. He finds that the Ws are coming in very well on 7 Mc. in the morning. At the moment he is in his finger crook as it may be getting a new E.W. Peter writes to a number of novice stations in the States and this keeps him very busy with the pen. Thanks also Peter for the photo.

Now come on you VKS boys, don't leave all the pen-pushing to Pete, we want to hear from you.

73 Mac Hilliard.

## BX LADDER

	Countries	Zns	S.b.	W
E	Conf. Hrd.	Hrd.	Conf.	Hrd. Stat.
E Trebilcock	277	255	49	35
D Granley	113	238	38	20 104
A Westcott	87	228	31	9 107
M Hilliard	72	228	33	18 152
M Cox	79	228	39	37 150
F Pownall	52	227	37	22 114
C Abernathy	58	95	39	22 99
N Harrison	47	95	27	8 7
I Thomas	41	138	30	16 97
D Coggins	10	98	2	1 60
G Earl	6	90	5	1 63

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Sub Editor: ALAN SHAWSMITH, VK4SSS (Phone 4-8836, 7 a.m.-6 p.m.)

35 Whynot Street, West End, Brisbane, Qld.

ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB EDITOR

Sunspot activity is still steadily on the decline, so the bands cannot be expected to be too bright. However, DX is always workable on some bands during such times, and reports from hand show that some good prefixes have been audible. The up in Europe in the afternoons has been reported as good in VK3 and VK3 areas. But the s.p. is now under the winter pattern and not so good.

? Mc. should provide some good Asian prefixes during the month of May, the next month or two. As I have not turned the receiver on at all this past month, I have no idea how 80 mhz or 160 mhz are behaving—but 80 mhz at least may be quiet until next spring.

**NOTES AND NEWS**

PXIER is currently active on both c.w. and a.m.

Tanger, on the west coast of Africa, is represented by ZBAA on 14 Mc. c.w. and is located in Bathurst, the capital city of Gambie. This A.C.T.D. has been worked on 14034 Kc. at 1300 G.M.T.

Rhodes CWGOWZ will end his stay on the island and is returning to Texas.

Greece: It is reported that amateur activities on the major islands may have been prohibited by the Greek authorities.

W2HGH announces the creation of the DX-pedition of the month, in the interests of world-wide a.s.b. and c.w. DXing. This program will commence with W2HGH on 14 Mc. a.m. approx. 1-18 May and will continue through 83 and '94. Next should be VK6DM in Nauru, 15th-30th May, then VR4DB on the Solomon Is.

V81BRIK occasionally works from ZCSBU on 7 and 14 Mc. c.w.

VU1XK works 14 Mc. s.s.b. around 13000.

VQ4EER is reported at St. Brandon.

VR4CAK uses the frequency of 14385 Mc. a.s.b.

ZS3D from S.W. Africa uses a.m. 14380 Kc. around 13000.

XKRAL can be worked on 21 Mc. a.m. around 16000.

Other active stations are 8LGM on 14 Mc. a.m. and v. (QSL via WY8V) EN209R is a.m. 14 Mc. c.w. SM4FGR is a.m. 14 Mc. a.s.b. 8M4UO, 2ZTM, 21 Mc. v. (QSL W2CTN), ZD6OL 14 Mc. c.w. 0630N (QSL W8VZP), ZD-14 Mc. a.s.b. 1830s (QSL W8VWX).

KG4CMA is currently on 14347 Mc. a.s.b. around 13000. QTH: Gladspur.

W3ZQ/K54 (Swan Is.) uses 7 and 14 Mc. c.w. about 06000.

Here is a run down on Gus' frequencies used during his vagabonding. For c.w. 10025, 10468, 10800, 11200, 11600, 12100, 12500, 13000, 13400, 13800, 14200, 14600, 15000, 15400, 15800, 16200, 16600, 17000, 17400, 17800, 18200, 18600, 19000, 19400, 19800, 20200, 20600, 21000, 21400, 21800, 22200, 22600, 23000, 23400, 23800, 24200, 24600, 25000, 25400, 25800, 26200, 26600, 27000, 27400, 27800, 28200, 28600, 29000, 29400, 29800, 30200, 30600, 31000, 31400, 31800, 32200, 32600, 33000, 33400, 33800, 34200, 34600, 35000, 35400, 35800, 36200, 36600, 37000, 37400, 37800, 38200, 38600, 39000, 39400, 39800, 40200, 40600, 41000, 41400, 41800, 42200, 42600, 43000, 43400, 43800, 44200, 44600, 45000, 45400, 45800, 46200, 46600, 47000, 47400, 47800, 48200, 48600, 49000, 49400, 49800, 50200, 50600, 51000, 51400, 51800, 52200, 52600, 53000, 53400, 53800, 54200, 54600, 55000, 55400, 55800, 56200, 56600, 57000, 57400, 57800, 58200, 58600, 59000, 59400, 59800, 60200, 60600, 61000, 61400, 61800, 62200, 62600, 63000, 63400, 63800, 64200, 64600, 65000, 65400, 65800, 66200, 66600, 67000, 67400, 67800, 68200, 68600, 69000, 69400, 69800, 70200, 70600, 71000, 71400, 71800, 72200, 72600, 73000, 73400, 73800, 74200, 74600, 75000, 75400, 75800, 76200, 76600, 77000, 77400, 77800, 78200, 78600, 79000, 79400, 79800, 80200, 80600, 81000, 81400, 81800, 82200, 82600, 83000, 83400, 83800, 84200, 84600, 85000, 85400, 85800, 86200, 86600, 87000, 87400, 87800, 88200, 88600, 89000, 89400, 89800, 90200, 90600, 91000, 91400, 91800, 92200, 92600, 93000, 93400, 93800, 94200, 94600, 95000, 95400, 95800, 96200, 96600, 97000, 97400, 97800, 98200, 98600, 99000, 99400, 99800, 100200, 100600, 101000, 101400, 101800, 102200, 102600, 103000, 103400, 103800, 104200, 104600, 105000, 105400, 105800, 106200, 106600, 107000, 107400, 107800, 108200, 108600, 109000, 109400, 109800, 110200, 110600, 111000, 111400, 111800, 112200, 112600, 113000, 113400, 113800, 114200, 114600, 115000, 115400, 115800, 116200, 116600, 117000, 117400, 117800, 118200, 118600, 119000, 119400, 119800, 120200, 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# FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PARA. END)

## FEDERAL

### F.E. MEETING

Present at meeting held on 8th May, 1963, were: SUM, ZES, ZJL, ZQV, ZAG, ZNI, ZCS, ZVV, and ZIK.

Correspondence from—

1. P.M.G., details of A.O. Committee for 1963.
2. Fed. Exec. for word of thanks to members associated with re-establishment of VK3WIA.
3. Rex Black, re V.R.C. and other matters.
4. Rex Black, re copy of letter to VK2 Fed. Councillor re V.R.C.
5. P.M.G. Com. re forward for Call Book.
6. Awards Manager, N.Z.A.R.T.; comment on 1962 VK2/ZL.
7. VK3DU re contact with overseas societies.
8. E. Ferguson, re R.T.T.Y. frequencies.
9. Scout World Bureau, re 1963 Jamboree of Scouts.
10. Membership return and circulation list, VK7. Bulletin: Feb. L.O.Y. Jan. I.C.D.O. Apr. VK6, Apr. VK6. May VK7.

**Business arising:** It was resolved that details and acknowledgement be published in the "F.E." concerning the formation of the Call Books were discussed. It was resolved that copies of certificates and badges be made available to Mr. Bowie. The other matters were set aside for routine action by the Secretary.

**Treasurer's Report:** The report was received, but adoption deferred pending clarification of certain items. The Treasurer reported he had to leave before the report was presented.

**Convention Report:** In a brief resume, SUM stated that three major matters emerged in the course of the Convention, and upon which progress was made. These were:

1. A sound basis for a new Federal Constitution. A total of nine points were proposed in detail, and were the subject of motions, it being decided that a Federal Company seemed to be the best basis to work on.
2. A sound basis for the Youth Radio Clubs which was achieved, and much detail discussed.
3. LTU representation—a basis of financing, involving individual Divisions, and other details, a target sum of £3,500 being suggested.

**General Business:** The main business was the election of office-bearers for 1963-4. Results were as follows: President, Major W. S. Mitchell, VK3UM; Vice-President, Mr. G. M. Hull, VK3ZS; Treasurer, Mr. B. Coates, VK3IN; Secretary, Mr. J. Lancaster, VK3YR; F.E. Manager, Mr. A. Kinsick, VK3HZ; Activities Manager, Mr. D. Rankin, VK3QV; Communications Manager, Mr. I. Lamond, VK3CE.

Co-opted members were appointed as follows:

Honorary, Mr. G. Glover, VK3AC, Government Liaison; Mr. A. Tinkler, VK3ZV, Co-ordination Manager; Mr. T. Straughan, VK3ABV; Fed. Awards Manager, Mr. A. Kinsick, VK3KB; Fed. QSL Manager, Mr. R. Jones, VK3YD; Fed. Y.A.C. Manager, Mr. J. Lancaster, VK3YR; Fed. Contest Committee, Queensland Division. Other matters discussed included a modification to the W.A.V.K.A. award, effective Jan. 1964, and another matter involving a service to members.

### INFORMATION OF INTEREST FROM F.E.

An informal meeting was recently held with the P.M.G. Department to discuss various matters, including the future of v.h.f. beam cones, deletion in licence issuance, Amateur Advisory Committees, t.v.i. publication of Handbook for A.R.O. as part of Call Book, suffixes for different islands, etc., under VKB2/KD, reciprocal licensing, 28 MC. for Z calls, etc. All information, including A.C.P. applications for A.C.P. Details and results will be available when the exchanges are formalised.

### BEEF AND THERE

The sixth Jamboree of the Air will take place on 19th and 20th October, between 0900 hours G.M.T. and 10 October, to 2300 hrs G.M.T. 20th October. More details will be published at a later date.

Members are reminded that any "Federal Gripes" can receive attention via your Federal Councillor, or if you hate F.E., write to the Secretary, C/o. Box 2611W, G.P.O., Melbourne.

Do you understand the organisation of the W.I.A.? We are going to print an article on this subject, for those who are interested.

VK3WIA is back in business, and it is hoped that regular schedules of operation will soon be established.

### VOTE OF THANKS

Federal Executive wishes to thank the following for their generous assistance in the preparation of the "F.E."—

Doug VK3DU for a modulation transformer and much hard work; Ken ZCW for an S.I.S. Max 22S, for a mast and hard work, and to Arthur Tinkler for the gift of a mast. Most particularly, Fred VK3H for the gift of a Hammarlund receiver, in respect of which it has been resolved to affix a suitably inscribed plate to the unit acknowledging the gift.

### AMATEUR ADVISORY COMMITTEES

The following are the details of Amateur Advisory Committees forwarded by the P.M.G. Department—

New South Wales: W. L. Woolnough, VK2GW; L. H. Taylor, VK3KL; N. MacNaughton, VK2ZH; G. G. Hall, VK3AQB; B. H. Anderson, VK3EAD; Dr. L. McNaughton, VK3EAD.

Victoria: Mr. J. M. Anderson, VK3QV; F. P. O'Dwyer, VK3QV; Mr. L. Storer, VK3ZQ; J. Richardson, VK3ZP.

Queensland: K. D. M. Grie, VK3ADG; C. E. Coghill, VK3CH; F. H. Brown, VK3AV; S. R. Baxter, VK3AT; C. I. Patterson, VK3AY; R. A. Collins, VK4XX.

South Australia: J. C. Haseldine, VK3JC; R. G. Roper, VK3SPU; M. D. Randall, VK3YR; Mr. Storer, VK3XA; W. D. Verrell, VK3WV; E. B. Stephenson, VK3ZB.

Western Australia: R. Chamberlain, VK3VRY; J. E. Rumble, VK3RU; H. J. McDonald, VK3SM; V. J. Kitney, VK3VK; A. Parkes, VK3MO; P. Haywood, VK3PH.

Tasmania: W. N. M. Nisbet, VK7BN; I. Nichols, VK7Z; P. Grievson, VK7QV; C. Spiegel, VK7KS; E. Beard, VK7EB; T. Allen, VK7AL.

## FEDERAL AWARDS

### W.A.V.E.A. AWARD

It has been decided that as from 1/1/64, VK1 will count as a separate call area, from which one QSL will be required. Three QSLs will still be required from VK3 as previously.

A complete reprint of the amended rules will be published at an early date.

### B.K.C.C.

The following amendments are applicable to the Countries List published in "A.R.", January 1963:

AP—Pakistan should be AP—East Pakistan.

ET5—Ethiopia. As from 15/11/63 Ethiopia is deleted as a separate listing and thereafter is combined with Ethiopia.

FRT—de Nova, situated in the Mezambo Channel, is a new and separate listing.

FRT—Gloriose Is., situated north of Malagasy Republic, is a new and separate listing.

GC—Channel Is. The single listing of these islands is now divided into Jersey Is. as one listing, and Guernsey Is. and Dependencies ( Alderney, Brechin, Great Sark, Little Sark, Burhou, Fetlar, and Lihou) as a separate listing. Credits already given for Channel Is. will be transferred to the appropriate new listing.

### SILENT KEY

It is with deep regret that we record the passing of—

VK2FZ (ex VK0FZ)—F. M. Steen.

VK7FJ—Ted Evans.

JZ6, PK1-3, 4, 5, 6. As from 1/5/63 the five separate listings of Neth, New Guinea, Java, Sumatra, Neth. Borneo, Celebes, and Moluccas will be deleted. PK—Indonesia. As from 1/5/63 this new listing will embrace the entire territory of Indonesia.

VQ5—Uganda. New prefix is VK5. ZD1—Sierra Leone. New prefix is ZL1. ZM2—Samoa. New prefix is SW1.

### V.H.F. AWARDS

V.H.F. awards have recently been issued as follows:-

**V.H.F.C.:**  
No. 22—Jim Forre, VK3ZHF, 50 Mc.

No. 23—Peter Poynter, VK3ZGP, 50 Mc.

**W.A.S. 50 Mc.:**  
No. 30—David Rankin, VK3QV.

No. 40—Peter Milne, VK3ZGM.

No. 41—David Sidey, VK3AE.

A. Kinsick, VK3SKB, Awards Officer.

## NEW SOUTH WALES

The general monthly meeting was held on Friday, 29th April, at Wireless Institute Centre, Chatswood. The meeting was opened with general business was kept to a minimum to enable the guest speaker, Mr. Joe Reed, VK2TJ, to deliver a most interesting and possibly somewhat controversial lecture on the advent of vertical polarised antenna systems.

To help emphasise the startling facts surrounding the angle of radiation aspect of propagation, Joe displayed a large range of very carefully prepared slides. He touched on the various types of random and linear types of radiators, with emphasis on position of loading devices, etc. This most interesting lecture, as expected, developed into general discussion, there being quite a number of very interested members present in the audience.

Well, Easter has come and gone, and with the much-awaited Federal Convention. The most important Federal get-together was conducted in Sydney in a very smooth and general manner. Our thanks go to all involved. One slight regret was that sufficient time was not available to show our guests more of the highlights of Sydney and surrounding areas.

Coinciding with the Federal Convention, the very popular Urunga Convention was held on the main road, Hill Inlet, Hill Inlet, Urunga. Represented Council at this gathering, and from their remarks they certainly enjoyed themselves, both on the official as well as the social side. As usual, a thoroughly commendable and enjoyable holiday week-end at Urunga.

With bad flooding taking place on the north coast all these notes are compiled. I may have some news next month on activities by VK3EM, Mr. Alan Evans, Hill Inlet, Hill Inlet, 25/P, at South West Rocks (near Kempsey) during the last few days. It appears that he is not altogether suffering from sunburn. Last news from him was that he had been completely washed out of tent, and was operating a water-cooled 122 from emergency quarters on the reserve. 73, 2SW.

### BUNTER BRANCH

The May meeting of Bunter Branch, held in the University College, was in very well attended. There being thirty-six members and visitors present. At the meeting the first use was made of the tape lecture service of the VK2 Division. Because of the absence of Les 2NA and 2AKX, the tape club sang the evening amid mixed cheers and other demonstrations of approval for where they! and at the conclusion of general business, Gordon's tape machine began to play.

The first voice heard was that of Lionel 2CS being interviewed on the A.R.C. by the history of the R.A.C. from the 1930s to the 1950s area. It was very pleasant to hear the voice of the old man even though he was at that moment on the high seas and on the way to G. Land. The recorded interview had previously been inserted in the "Maritime Digest," which is a local programme originating from 2NA each Tuesday evening. Lionel certainly has done a great deal for Amateur Radio and programmes of this type maintain the good tradition.

The first lecture was "Grid Dip Oscillators" by Bob 30A, and there was much feverish scribbling in the half light to get down all the details of the various circuits described. Following on this was another tape, "Elimination of T.v.t." by Harry ZFA, subject dear to all our hearts in Newcastle. Both tapes were well received and the audience's interest will be further investigated in the future. The meeting closed very late with some frantic bartering over surplus crystals made available by the aforementioned chairman. There's a little more to say about him, however, for he smokes and the fiddlers in chief just looked on smoking his nose and selling more crystals.

The reason for the absence of Les from the meeting was that he was in Brisbane trying to pacify an ABC Radio Inspector who claimed he had been heard on frequencies outside the band and him, the President too! The solution—too many ergs in the grid circuit and easily fixed, but how about the official gentleman in Brisbane?

Very attended the meeting as well and was given a large sum for being late. Afterwards the fine was waived because everyone was so pleased to see him. He was able to tell us all about his new employers who only allow him to attend meetings.

John 2ZJO was engaged in a strong rumour

which looks uncommonly like a 6 over 8 skeleton slot for 2 Mx. It is said it will

replace his t.v. aerial when the new station comes on the air at about the same time as you read this.

I am only able to write kind words about Bill 2EXT since he gives me such good signal reports on the Monday broadcast. Anyone going to Bill's shack is advised to wear sun glasses or be dazzled by the exotic gear displayed there and rumours have it that Wagner transceiver is on the way. The boys are going to give him some wire netting too—to keep the ducks out of harm's way.

Construction wise, none could be busier than Bill 2FL. He has just completed a driveway for the car and has some new r.f. propellant which occupies his time at the present. Still he manages to get on 3 mx at times, as does Ian 2ZIF even though very busy with the new peddler, if that is the correct term, he has been working hard to get John 2ZJO's place as social secretary since John has had to answer night service calls made by the friendly viewers. This has curtailed John's other activities, but we hope to see him able to get to meetings once in a while.

Rodney 2CN claims that the reason for the excellent signals which emanate from his QTH is the careful construction and use of a s.w.r. meter. I hope that he is preparing to do a t.v. transmission as well. One would think he would see enough at the large white building under the hill. How true I cannot say, but Neil 2ZCU was reported to be back on the air before he had his first meal after his accident. He certainly looks fit again and is making a splendid improvement and was busy enquiring about crystals the other night.

Reported to be the most potent VK signal in the U.S.A. Jim 2AAT is still busy looking for a suitable location for his new studio. In the past twelve months he has won three sections of the VK/ZL Contest and come second in the fourth section, holds the "CQ" World Wide 14 Mc phone certificate for VK as well as being first in the R.R.L. 2M DX Competition for VK. Should you happen to be a modern s.a.b. station, then a visit to Jim in Toronto is a must, if only to hear the ease with which DX is worked.

We wondered why it was that Bill 2ZL had not been heard for a few weeks. The reason was that he had moved to a different flat without first advertising in these notes, failed to work and as a result he was marooned on the Phenyl Bay island. The bow the aerial is still above water level though and what an excellent earth mat all this water makes! The cause of the alarming loss of coat-hangers. All this has been caused by Peter 2AY who not only uses coat-hangers as antenna elements, but operates the tx in the wardrobe. He even got rid of the bed by using naphthalene flakes! (Gordon Pansy)

Sherwood, our high power modulator specialist, is really sticking out his neck this time. He has forecast that he will definitely be on the air before January 1947. Only a few solders joined," says Sherwood, "and shall be ready to go." To where he did not say. That finely engineered heap of American rubbish which he was seen driving the other day did in fact take the Cessnock boys home again back where it had not pursued followed the municipal dustcart. Four sets of metal parts are fitted.

On the associate members front there has been general disorder for the past few weeks. Allen went to live in Maitland just so that he could have a red telephone, and Les left

Marmong because he ran out of earplugs and could not sleep at night. He has now overcome—Sickton in fact, has also been unable to beat the ferry across on his bike. Belmont, Bob, Max and Ross are still busy doing constipated problems involving Ohm's Law and getting them right too. Jim Brown hit the bottom of the "A" & H. and down the clear smacking bricklayer, still whilsts Morris believes he cannot afford to buy a key well that's progress for you! Marmong will really come to the fore in October for the Annual Field Day which will be held there this year instead of Bischoff. Keep your eye on these notes for all the details.

And that's the roundup for another month. Letters of complaint should be addressed to me at whatever address you like, or, as an alternative, to the Secretary in person at the next meeting together with all the other chapters mentioned in these notes. How about coming along? Room 15 in the classroom block is our usual meeting place and you'll find us there on the first Friday in June that's the 10th June, and the exact location is the University College Tighes Hill. We guarantee an interesting night and a special bargain which you could take away! Do I hear agreement? T3, 2AKX.

#### CENTRAL COAST ZONE

On Wednesday, 2nd May, the weekly radio classes conducted by Gordon Proctor Radio Club began and with 14 enrolments it is hoped that 12 months' study will enable most of these fellows to qualify for their tickets. Bob 2NN, John 2ND and Gordon Proctor are organizing the course and valuable older members will assist. At the May monthly meeting, guest friend Joe 2ZR lectured to us on "Radiation from the Antenna" presenting some new information on a most important subject. Wally 2XW was in the Antarctic in 1941 in the scientific operation of Sir Douglas Mawson's expedition. Some of the privations and achievements of this expedition were graphically shown in a documentary film "Antarctic Pioneers," recently shown on Channel 2. The film and commentary were completed by Captain Frank Hurley a couple of weeks before his recent death.

Alec 2AKX and XYL Mona are making a quick trip to Vancouver during June and July. We were able to drink their health before they departed by radio. We hope they find some interesting and useful gadgets in the far fields, rather greater than ours. Alec makes good use of his excellent 2 mx location and has regular 200 shots with IVF Canberra, which is nearly 200 miles. Alec uses an RT37 with an attempt to convert the sideband signals to 144 Mc. This can be run easily on 200 Mc. Command rx with crystal-locked converter.

Other active 3 mx stations include IRU, 2RF, 2ZWW, 2ZGE, 2AFJ and your self. Three of these stations have now completed 1.5 m. sets and these will soon be freed up on the first VK2 emergency net frequency 144.6 Mc. With the small sealed crystals and a miniature switch it should be a simple matter to convert single channel sets to three channels.

Phil 2HJ has been holidaying for some time in Brisbane and has been keeping in touch with Doug 2ASB by mobile s.a.b. transmitter on 7 Mc. Doug 2AN, the Drake 2A rx has been pressed into extra service and functions nicely as a transceiver when fed into the phasing system (generating sideband at 485 Mc). The benefits of this arrangement are many and anyone planning an s.a.b. exciter should keep this in mind. If done carefully the construction is not complicated and the freedom from netting worries is quite an experience. It is noted here that the stability on warm-up of the Drake 2A is 3 or 4 times as good as the HT2.

Goeff 2AI has returned from a holiday at Mt. Gambier. 2AI is still oscillating around the State like a bee in a bottle, occasionally having fun on 100, 200, 400, 800 and 1600 Mc. 2AKX, 2AFJ, 2ADZ, 2ASA, 2ERB and 2AKX have been heard on 80 or 48 metres.

A visit to the Federal Convention at Crow's Nest with Keith 2AKX and party was quite an experience. The dinner at the Wentworth Hotel was a repeat of previous meetings, many interesting Hams from other States (and one's own) in an opportunity not to be missed. We do appreciate the efforts made by the various delegates who come so far and spend so many hours to co-ordinate the policies of the Amateur movement. T3, 2ON.

#### VICTORIA

After so strongly stressing the fact that Council meetings would, in future, be held on the fourth Wednesday of the month, who mistook the last meeting night? Yes, yours truly. Consequently can now only report matters secondhand, and my highly paid spuds

have given little to work on. This was the last meeting of the then existing Council, and as Vice-President he left for Jan Michael Owen acted as Chairman. Michael reported in detail on the Federal Convention recently held in Sydney.

One matter on which Council would like comment is the proposal for amateur c.w. segments of the 2M band. The suggestions suggested are: 1800-1810 Mc., 2.5-3.5 Mc, and 35.0-35.2 Mc. If you have any thoughts on this subject, drop me a note.

Nine applications for membership were received and these were recommended to the May general meeting for acceptance. Details further down.

The Annual Dinner has been tentatively scheduled for 8th September, same place as last year. This will enable arrangements to be made. Full details will be available to all in due time. Married men should lodge applications for leave passes immediately, unless they intend to do the right thing and take the XYL along. (A much better idea.)

New Council for the coming year includes four new members, to replace those who are globe trotting and those who for various reasons have to leave. As only ten nominations were received no election was necessary.

The new Council consists of VK8, VK3, JVY, JAC5, 2AFJ, 2AQF, 2ECE, 2EEL, 2EZO and 2ZIQ.

One problem which Council faced was the fact that those holding 2 calls were ineligible to operate the low frequency equipment at 2W1 and volunteers were required for the broadcast roster 2ATP, 2AVV, 2AEL and 2QV indicated that they will join the roster. Gentlemen, we invite you.

The Division has been invited to supply a working exhibit of Ham Radio at the "Wonderful World of the Young" Exhibition from 30th to 3rd May at the Exhibition Buildings. Although there is very little time for preparation, it was considered that this would be a wonderful opportunity to publicise our hobby, and we would accept the invitation. So much for Council.

The Annual General Meeting was held on 1st April 1947 at 8.30 p.m. in the hall attending (at least so I'm told). In the absence of the Vice-President, Michael 2EZO acted as chairman and presented the annual report, followed by the treasurer's report from JVY. The meeting was advised of the names of those now on Council and invited to make recommendations for President, Vice-President, Secretary, Michael 2EZO and Ken 3AC5. John 3EJ fell for the Secretary's job.

New members admitted to the Division are: Dutton, 2DZK, 2KJN, Red Drummond, 2DZL, John Wilson 2ZOD, Doug 2ZOL, Eddie Carlier, who is awaiting a call sign allotted to full members—and R. Flanagan, D. Bradshaw, C. Elliott, N. Carroll and R. Cornley all for various grades of associate membership. We welcome all 11 to the Division and let us see you all at the meetings.

The June meeting will be held at the Hobart 45th Victoria Parade, East Melbourne, when a talk on the subject of "F.M." will be given by John 2EL. Smoking is permitted in the room, sugar will be available, the library will be open, and best of all there are no parking problems. We are looking forward to a record attendance as this will give those who have not yet seen the rooms the chance to do so.

Having been on holidays am very much out of touch with what has been happening, but have gleaned on very good authority that IPS is not on s.a.b. and was not contemplating making any s.a.b. step but having listened to an hour's sales talk from Mr. V.K. 2AFJ, am tempted! (Repeat MAY HE!) This is subject to him learning to resolve it or somebody presenting him with a Drake 2B or similar rx. By the way, Panday old boy, no Command rx's were available in New Zealand.

Now for Zone notes although the N.E. Zone let me down last month by not reporting their highly successful State Convention, T3, 2AFZ.

#### STATE CONVENTION, SHEPPARTON March, 1948

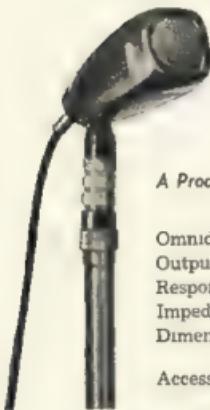
They came from near and far, the members of the State Association. Assembled at the 2SR front office to receive their don't ask accommodation details. At 4.30 p.m. most returned to hang their hats up in the 35R auditorium for the business meeting. Nobody yelled fire, in the meeting continued until about 8 p.m. The hall was packed with about 80 members, of whom many must have been smokers and there was no forced ventilation.

A Ballarat member, Eric Dalby, passed beyond the vale a week or so before this. Three of his closer associates prepared his gear into lots and brought them along to be auctioned





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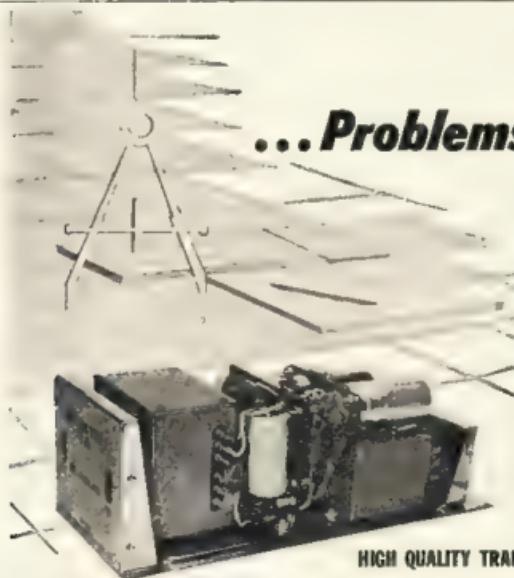
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Adelaide University having a shot at his Bsc.E., and also won the A. H. Peake Bursary and the Commonwealth Bursary. As he had only just turned 15 years when he passed his Amateur exam, he was not permitted to enter the competition, so he went on the air, so he put aside his ideas of Amateur Radio and concentrated on his studies and came out of his Leaving Honour with five subjects, five credits. Now working, Graham hopes to hear from USA soon as nice work Frank to you also, not often a protege turns out trumps like that. Thanks for the letter out.

Whilst on my holidays at Oakbank, I was summoned to the local Post Office and handed my usual mystery letter addressed to me in care of "Finsbury" telling me that a telegram has arrived for me without fail over the last ten years and is probably the main reason why the local inhabitants of Oakbank lock their doors each time I pass and peer in a decidedly scared fashion through the windows. I have been here but have yet to pin down the sender. However one of the local gypsies allowed me to cross her palm with a ten pound note (the way, where is that ten pound note?) and she told me that the country people were Norfolk Island natives with bones through their noses and Lord Howe islanders with Morse keys shoved up their jumpers. This seems to ring a bell somehow, but as it was going to cost me further ten pounds I did not press the issue. I consider it. If ever find out who this Arch villain really is, there will be quite a Hewitt and Cry after his skin. Very subtle, is it not?

Hear from Bart SGZ with respect to the University Amateur Radio Club which by the way has been most active for while because of studies etc, plus the fact that the new engineering building is in the process of erection, which meant the aerial coming down for the moment. The SKA rig is in the process of being reassembled and I am sure somebody tried to improve the v.f.o. to the extent of confusing the issue. How tactical can I be? But all now is well, and by dint of much hard work and the selling of deposit money for a new rx. Everybody is more than satisfied with its performance, especially as the serial is only a piece of wet string at the moment. Have heard them on this week on 4m on the 100% band and the signal was louder than ever to me.

Over the past two or three years or so the question of renewing my Amateur Licence at the local post office instead of at the Receiver of Posts has been raised. It is only I and also provided me with both targets and ammunition galore. Early this year, to my dismay and sadness, the Department apparently wearied of the position and allowed me to renew the licence at the local O.S.R. and thus lowered the curtain on certain paragraph each month in the magazine. Imagine my surprise and gratification to receive, just before my holidays, a letter from the Department under the heading "Printed Notice" informing me that no trace of payment of my licence could be found and if I was still in possession of radio communication equipment and did not pay up, it was proposed to cancel my licence. Now what about it? I followed your advice and look like having my licence rubbed out. What do I do now Max ZARZ? Anyway, I live to fight another day. It should be good for another three or more paragraphs. You know. Pay your licence at the O.S.R. FOZ says you.

Jack SLR still enjoying his voluntary retirement, although he admits that his XYL manages to find plenty of work for him around the house. He has not been very active for some time, but is tinkering with the idea of building up a small rig for 40 and 80 mrx and renewing acquaintance with some of the country boys with whom he spent many pleasant hours in QSO back in the "good old days".

The annual fees for the Divisional membership are coming in very well for the new year, but in case anyone has forgotten, now is the time to come up the upside-down and become financially secure. Always remember that you are only a voice in the wilderness by yourself, but as a united Division your voice can be heard in the right places at the right time. I know, I know, you say that's that, but try and get in touch with officialdom of your own. You are not in the race. Look at me. They even threaten to cancel my licence. You Beast!—got it again.

All the bits happen in VK5 when I am away, so this year was no exception. Al Scarlett and his wife paid a rush visit to our fair city, arriving by air on Wednesday afternoon, 17th April, and returned to VK5 on Monday, 22nd until the same to you. A good bunch of us, Al's XYL and his friends' XYLs of course, were at the airport to meet him on his arrival, included in whom were Bo aBO and XVI, Johnny De Cure SKO,

Harry Cooper, Mr. Peake (and co. to Harry CHG), Bobby Bruce and his 2nd co. Pete Slattery, the mother and father of Bob, and several locals unknown to me. One of the highlights was when Jack SJ, Secretary of the club, and I only found that out by keeping my ear to what the wild waves have been saying, but I am glad I did because I shudder as to what would have happened to me if I should have run into Bo. So the lama took Al and his wife for a trip in the northern areas on the Thursday, with Bobby Bruce doing likewise southwards on the Friday, with Saturday being spent in meditation (if that is what visiting Amateurs do on Sundays!). Sunday was an "open house" on the QTH of "BO" at which the aforementioned gang were joined by Ted SJ, and I take it for granted that the conversation oscillated between the merits of 7 MHz, from Ted and 2.5 MHz from Johnny! At the airport on Monday, Mr. Peake and Bobby Bruce were among those waving goodbye, and Al for once in his life was speechless at the hospitality shown him.

Latest news from the Port Pirie Amateur Radio Club tells of their good fortune in acquiring their own club rooms at the Port

Pirie Aerodrome through the helping hand of the Council. Plans are in hand to organise working bees, etc., to paint the rooms and generally make it into respectable premises. The XYLs of SGZ and SGES are starting to haunt the auction sales, pick up old chairs, cupboards, etc. and a good time is being had by all. Two meetings have been held in the new rooms, and most of the business has dealt with the formation of a Youth Radio Club. The first meeting of which was held recently to the tune of 61 enrolments, much to everybody's surprise, only about 20 or so being expected. Now we're up, and a female one at that, stressed the point that in such circumstances the biggest problem is of course finance, and suggests that any of the city stickers who may be passing through Port Pirie at any time might like to drop off all those spare bits and pieces that have been amassing up there. That's pretty much it. A phone call to Pirie SGZ will bring someone at top speed to take delivery, and of course, anybody who may happen to be in Port Pirie is especially welcome to drop in to either the senior club meeting on last Wednesday night in the month or to the youth club meetings which are held alternate Friday

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nights. Well now, how is that? This club is certainly going places, and I hope that Ken will have completed the new hall before he gets another glance at that paragraph, because whilst it is hardly my answer to his challenge, it at least shows just what can be done by a combined effort. Many thanks Pamela for the message, and call you "Pam".

Stuart SAGS can boast of a first class operator in the family and don't mean maybe. His daughter Val is with the Navy up at Darwin and if all can be believed, wields a sword and has a series of strange experiences. Stuart was never able to say hello to Val on the odd occasion that she has happened to be in the shack of one or other of the boys in Darwin.

Ron SVH, being in temporary accommodation, cannot find the space to set up his gear. However, when the new house is completed, the plans of many months will be put into effect.

Leo SGJ is staging a come-back and his lower has left the prone position on the grass and is now above the frosttops. Nothing as yet on top, but at least it is in the right position for final activity. Ted SBU is among those missing at the moment and my say he has nothing to report on him. Possibly a search in the c.w. section of the bands might disclose his whereabouts, but until then silence reigns.

Dale BEER, Gary SZGR and Lee SZLS are all fairly active on the v.h.f. bands, and above all are solid supporters of the S.E. monthly meetings, and with Col and Trev Hutchesson, Jim Jones, Lenore and others help to keep the attendance number up. The last mentioned three are anxiously awaiting the results of the last L.A.O.C.P. examination and should know by the time these notes are being read, just how many plenteous ones there are. The "anxiously waiting business" he recently became the proud father of a bouncy bouncing baby boy. Naturally my internationally known warning of "DX before dishes" now becomes "wives before nipples". Pardon me for stealing your thunder Col.

Col BCJ is still keeping his luncheon sked on T Mc, and is in the process of building a new 100w. tx in an endeavour to compete with members of the network. Is this known as "keeping up with the Joneses"? Careful, Col.

My espionage agent from Mt. Gambier gently draws my attention to the fact that we all are Radio Amateurs regardless of the type of ticket held! OK, OK, I will don my new suit of sackcloth and ashes, but I must admit the truth of that statement, even if nobody else does.

Usually manage to contact a couple of the gang at Mt. Gambier from Oakbank when on my holidays, but this year heard plenty of signals from the areas just over the border, but no direct from Mt. Gambier. Incidentally, he was the proud recipient of an illuminated invitation to the annual convention of the South Western Zone of the Victorian Division of the W.I.A. Unfortunately for me, and probably for them, my leave ran out before the date of the convention, and I could not accept their kind invitation. However, when informed of the sad news, the Secretary (Don 2AKN) suggested that as I was passing through Vic's "Ideal City" (his words, not

mine), it was hoped that I would meet up with some of the boys. Again unfortunately, etc., etc. circumstances prevented me from making a stop on the road. However, give it time Don, I might pop up at one of the meetings, who can tell? In disguise, of course, there is a price on my head in VK!

The VKS Interim, I felt that I detected a note of regret in the challenge issued to me by Ken 1KM in the April issue of the magazine, because I used the words "getting on the bandwagon". If this be the case, I hasten to assure you, that no one will regret it. I have nothing but admiration for the scheme, and the efforts of all concerned. I used the words in the modern idiom, to wish something new and therefore something of interest to all, regarding the challenge I made, just for challenge, but under the VKS system of running the Division, the Council and President make all the decisions as to who organises what and which, therefore I am not able to accept the said challenge without the permission of everybody kind of my respect to that august body. Incidentally, in my remarks regarding the Brompton Boys' Club, the organiser was given in the magazine as Joe SJA. It should have been Joe JO, and did he let me know? You can say that again.

My holidays were split up into three sections, and after the second section I returned home to be greeted with the news that a VK4 had called several times to see me and was coming back. Grabbing everything within reach I built a stay-at-home for the city for a week or so, only to find again on my return that the same VK4 had called and would be returning. Now I ask you, how would you feel about that? All I have said in these notes to VK4ES. Anyway, I decided to stick it out and face the music, and I am glad I did. He turned out to be an E.W.I. named Ben Hall, an extra good bloke, more than interested in Amateur Radio and a good ambassador for VK4 to boot. Nice to meet you Ben.

No sooner did I recover from this shock to the nervous system, than believe it or not, I get a telephone call at night from a complete unknown voice who eventually turned out to be Ken 1AFJ, who had just arrived for a visit to VKS. I should have been prepared for it, because a VK4 scratch card which I had addressed to it, a couple of months before, and the name Pincott had been haunting me ever since. However, burying the hatchet (not where it should have been buried), I invited Ben and the family to lunch, and washing out and getting dressed, went up to post to VK3 after the lunch. I sat back and waited for my fate to overtake me. Well, it wasn't too bad, he brought along his army with him and armed with gifts like my XYL, my grandfather being dead, or not, for that matter, and proceeded to charm the entire household with me gritting my teeth. Before you could say boo, my XYL was rushing around digging some of my neighbour's plants from the garden and cramming them into Ken's wife (Joan) pocket, or wherever XYLs keep prized plants. My grandson was whispering in my ear at odd moments that Ken's daughter Judith and her friend, Margaret, better known in amateur circles as "The Duck" and "The Queen Margaret," were two "lubberly girls," and finally, in my upset mental state I had sunk to the level of letting Ken blow down my ear on the subject of s.a.b. even striking so hard as to send him off on the topic founded subject. Well, I can't go any lower down the scale after that, so I might just as well say that we thoroughly enjoyed their visit and rate them as good scouts. We hope

they enjoyed themselves and will come again some day, but please, not for a while, let me have some quiet, respectability, and a little of salt to rub in my mouth. Ken delivered a present to me from the gang in VK3 officialdom, which he said they felt would help me to brush up my technical knowledge and get me into shape for the air. What was it? It was a thin book, green in colour, smelling bit mouldy, all about wireless, with interesting advertisements about ship travel, and er, and er, oh what do I care, it was the 1813 edition of "The Year Book of Wireless Telegraphy and Telephone". Oh dear, oh dear, what a monthly £2 de VK3PS—FanSy to you.

## WESTERN AUSTRALIA

Well, another Council election has come and gone, together with an Annual General Meeting, and the usual election required by constitution that nomination forms were circulated among members prior to the meeting, and it was most gratifying to me, personally, to know that every member of the Western Australian Division regarded my annual election work of such high standard that they were loath to tear the sheet off and return it with somebody's name on it who would be prepared to accept their responsibilities in the running of the Division, and for election to Council. As I say, it boosts my ego with a sight on it, but unfortunately it doesn't get new blood into the Council.

Talking about new blood, I believe we have a visitor from Eliz. Land, Jo-Burg locality, who is spending his long service leave in VK and surrounding islands, at the moment using the call sign of VK4ZS and operating a KWMI with a dipolar on s.a.b. and c.w., to watch out for us.

S.S.B. reminds me that Ted SAG has been on #8 mx with the Suck Suck Blow and has much improved quality since the visit from Vic 4VK. Keep it up Ted, it's funny stuff.

Wall SAG is still not satisfied about this business of sending out a signal with no carrier and only half the number of sidebands that the best-sounding s.m. signals receive. However, he has modified for low power, the sidebands and calling it double sideband. Almost sounds like two times eight by seven plus six, doesn't it? I think a very potent drop anyway. Wall

All the numbers lead me on to Allan SAR who is a very busy man, and I am sure, I know this often happens when you press the key, but Allan has dozens of them. In fact it takes both hands and both feet and at least one knee to work all these, and Allan even uses his eyebrows for effect. All right, well I'll tell ya, he's a Hammond organ and you can actually hear all these frequencies! What's that? Not No, Allan will not be bringing it along to the meetings!

Incidentally, how about the meeting time in Sydney for the Easter Convention and spoke very highly of the arrangements made for their comfort. Congrats to VK1! Believe Bon was never very sure when the sessions began and ended, but the fact that he went on in the hotel bedrooms for all sorts of hours. Over 30 agenda items were dealt with as well as general business and policy matters. No F.E. have enough to keep them going for another 12 months.

Another one our flying Hams is Dennis 6AW who recently returned to duty after six months in the East. Understand that Dennis saw some color t.v., over there, and by the time you read this, we will have had a lecture from him about it.

Our Patron, George SGM, is still regaling us with technical titbits on Sunday morning and George certainly covers a range of subjects and judges by the comments has an interest in wide audience. All the best, George, and keep it up.

Here's one for the books. Reading the mail one night and heard Jack SBU say his XYL is doing some study on the ticket and understood that she was on the order on London. SBU also has an XYL who is doing some study. Good luck to you both and no doubt Aline SYL will be pleased to hear from you when you turn the rig on with your own call sign!

Down Under we will find that Robbie SKR has just completed a re-broadcasting programme in the home and now looks to the more serious and important things in life, such as t.v., s.a.b. and putting a signal on the air again. Robbie's first broadcast and repairs to the quad freak halfmast last month exceeded Robbie's calculations, causing fracture of some of the copper wires. Once more up the tower, Bob.

Frank, the one responsible for the opening of the golf

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Herb EXO, a regular on 80 mx these nights, is putting the finishing touches of solder to his new 100 m.p.h. antenna. It had been damaged in a storm last month, but is back in working order after using several packets of band-saws to lash the tower together. Herb states "She's up forever now, string just won't hold a tower up."

Clarrie EXO has been using up 80 mx lately and has packed his case and drifted eastwards, to attend the L.R.E. Radio and Electronic Engineering Convention in Melbourne for a week, then some tramping around Victoria and South Australia for a few weeks. T3, 6LS.

## TASMANIA

I record with deep regret the death on 8th April, 1963, of Ted Evans, VK7TFJ, after a long and painful illness. We extend to Mrs. Evans and our family sincere sympathy in her and their loss. Ted, at various times, had acted President, Vice-President, Treasurer and Councillor of our Division, and had also been an active Amateur as well as a keen professional radio technician. His assistance in such Divisional activities as the R.D. Contest and the Jamboree of the Air will be sorely missed.

Crosby TCR has erected a more suitable antenna, particularly on the 80 mx band. Crosby is also in the course of constructing an a.s.b. rig. Snowy TCR and Ken TKA spent Easter afloat on the yacht Mourine, as well as the first weekend of April. Ken is operating another year sailing mixed with operating of mobile marine. Snowy was delighted when he worked a P2 station (I have never heard one) during Easter.

Ted TCR has returned to VK7 after the Federal Convention in Sydney. I would like to express my VK7's good wishes and enthusiasm about the Youth Radio Club scheme. We hope his enthusiasm will inspire a considerable response in the rest of us here in VK7.

April must have been a peak month for mobile operation, but May will be very quiet. Michael TEAV, HZ2, Peter TPF, Graham TEP, Michael TEAV, John TJJ, Lee TCK, Len TLN, David TZA1 and Ric TZEAT were all heard operating mobile, as well as Snowy TCR and Ken TKA mobile marine. These activities can only do good and the band activities have reflected a considerable improvement as a result.

Congratulations to Sam TSM on receiving the certificate authenticating his W.A.E. Second class amateur ticket. Sam, particularly in the Northern Zone, Bob TZBR and Graham TZBR are both active on 144 Mc., and these young lads are looking both VK3-wise and south. Amongst older Amateurs, Den TDK is very active on 80 mx and has received many congratulations ready for working 21 Mc. DX. Phil TZAK has his new 80 mx gear and new shack fully operative. I also hear that Jack TJB will very soon be driving an 812 to 15000, but in the meantime, has been working the 80 m. band on his rig with a EDQEA with most gratifying results. Charlie TKS has the rx

side of his mobile rig operating near perfection.

The lecture at the May Divisional meeting was on Traffic Signalling, in the electronic sense, delivered by Mr. Russell, traffic engineer for the Transport Commission. The result of our lecturer's planning can be seen around Hobart and bears testimony to forethought and capacity directed to a very fluid subject. T3, 7Z2.

## NORTHERN ZONE

The monthly meeting of the Zone was held a little earlier than normal, on May 11th, and it was a very successful meeting. There was plenty of lively discussion during general business and the feature for the evening was a tape lecture by Harold ZAAH, entitled "Fox Hunting". Our committee would like to thank George for his very fine lecture and commendable style. It was thoroughly enjoyed by all those who attended, from the youngest to the oldest, and is sure to add impetus and more satisfaction to our activities.

The activity this month seems to have been centred mainly on v.h.f. bands. Two new call signs have appeared, Bob TZRF and Graham TZBR, and this makes nine active stations in the zone, three more than last month. The local boys have been given a chance to try their gear over longer distances the last few weeks because David TZA1 and Rick TZEAT have both been very active on Flinders Island and have been operating between Flinders and Launceston, and to Postina. Some of the stations are only running low power of about 3 watts and the signal reports received have been surprisingly good.

Our competitor, Den TDK, has again placed in the VK-ZL DX Contest, taking first place for VK7 in the c.w. section. Den has been casting his eye out for suitable relays. He may come up with that electronix rig soon. Very recently, Bob TZRF and I am going well, and I hear, too, that Graham TZBR is working out well. These young lads should do well and when joined by their confederate, Joe Jelstone, there will be no stopping them.

Sorry to hear that Ray TZER has been on the sick list—finished off his long service leave in bed—but later reports say that he is now back at work, so it takes a lot to keep you down, Ray.

Ted TZBB was very pleased to make contact with the Flinders Island boys TZA1 and TZEAT. It was the first long haul contact—130 miles on 80 watts. Ted has been working hard at his v.h.f. set for the exam, a few weeks back, and soon should have his full call.

The 30 mx band has been opening well here lately during the afternoon and Ted TEC has been heard on 100 m.p.h. on the key, and in his shack, also. Den TDK has been picking a few more new countries. He now has more than enough for his D.X.C.C. This is the second time Den has worked his D.X.C.C., having done it on his V.H.F. set.

John TJB has his lower finished and erected. It is a 3 ft. triangular steel type, and he hopes it will stand the 100 m.p.h. plus winds OK. It should soon be sporting a quad on top. This may be more or less permanent, as the tower, anyway home's hoping. His new tx has been on the air, but is presenting more problems than thought possible, mainly with parasitic oscillations in the final. Really vicious they are, and he has learned a lot about neutralizing pi coupled finals, too!

Very pleased to meet two visitors to our last meeting—Keith Jones, who has his Limited licence, and is studying for his full licence before obtaining his A.O.C.P. He is a good lad, who is keen to obtain his A.O.C.P. Please to have you along chaps and we wish you every success. T3, Johnny Fox.

## NORTH-WEST ZONE

As our usual scribbles has seen fit to go globe trotting I will do my best to find some news. Don't be fooled by the tx originating from Athol. If at some time it announces itself as TMS it will only be that it is not yet accumulated to Bunker. We are still awaiting word for Den to come on on what he describes as his secret weapon. If he radiates it via that quad it will be diagonally polarised. George is really sold on s.w.b. Would like a bit more distance on the other hand, says George. Keith TKE is reported to be having some success portable. Also notice that Sam is still receiving the usual flood of DX cards.

Had a visit from TJP the other day. Do you remember John? Well, I have lost touch with you. Was thrilled to have a QSO with Keith TRX from the rig of ZL1AMM Auckland the other night.

Some drastic changes are coming to this Zone due to lack of members. Social meetings will be held in private houses soon. Therefore we will be able to accommodate a limited number only. Bad luck chaps, but you asked for it. Remember that what you get out of

any organisation is commensurate to what you put into it. Perhaps we could blame t.v.—the progress of t.v. stations.

We are hopeful that some aspiring (possibly perspiring) Ham will face the next Exam. The best of luck chaps and if you used any help it will be forthcoming.

Our apologies from the May social meeting. Quite a good roll-up. Nice to see IDR and TTT again. If this keeps up we may be able to revise our ideas. Some interesting lectures were delivered and I am sure that we will be able to interest others in some aspect of sideband. They are going to convert us all if we don't put up some sales resistance. T3, TMX.

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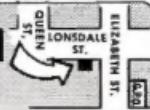
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## this woman is making a valve



Pictured above: One of the Valve Company's automatic tubulation machines. The last operation on this machine is a controlled annealing cycle to ensure high impact resistance of the glass envelope of the finished valve.

Shown below: A technician positions a Super Radiotron valve in one of the many pieces of advanced Automatic Tune-up equipment manufactured by Auto-Lab. Industries Pty. Ltd.

## this man is installing it in an automotive ignition scope



PHOTO BY COURTESY OF AUTO-LAB. INDUSTRIES PTY. LTD.



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